

3: Temple

G-5

(1901) 1903 AZ2 Andamans AZ2

000

CENSUS OF INDIA, 1901.

VOLUME III.

THE ANDAMAN AND NICOBAR ISLANDS.

[Title page]

000

*Agents for the sale of Books published by the Superintendent of Government
Printing, India, Calcutta.*

IN ENGLAND.

HARVEY S. KING & Co., 65, Cornhill and 43, Pall Mall,
London.

E. A. ARNOLD, 37, Bedford Street, Strand, London,
W. C.

CONYFARLE & Co., 3, Whitehall Gardens, London,
S. W.

SAMPSON, LOW, MARSTON & Co., 31, Dunstan's House,
Peter Lane, London, E. C.

P. S. KING & SON, 2 & 4, Great Smith Street,
Westminster, London, S. W.

LEITCH & Co., 45, Great Russell Street, London, W. C.

KING, PAUL, TRENCH, TESSNER & Co., Charing
Cross Road, London, W. C.

B. ALFRED QUARTICE, 15, Piccadilly, London, W.
WILLIAMS AND MORGAN, Oxford.

DEIGHTON BELL & Co., Cambridge.

ON THE CONTINENT.

FRISHLINDER & SOHN, 11, Carlstrasse, Berlin, Ger-
many.

OTTO HARRASOWITZ, Leipzig, Germany.

KARL W. HIRSCHMANN, Leipzig, Germany.

ERBERT LEBLOUX, 39, Rue Bonaparte, Paris, France.

MARTINUS NIJHOFF, The Hague, Holland.

IN INDIA.

TRACER, SPINK & Co., Calcutta and Simla.

NEWMAN & Co., Calcutta.

S. K. LALINI & Co., Calcutta.

R. CAMBRAY & Co., Calcutta.

HIGGINBOTHAM & Co., Madras.

V. KALYANARAMA AIVAR & Co., Madras.

TRACER & Co., Ltd., Bombay.

SCHEPPELSTADT, AMERICAN BAPTIST MISSION
PRESS, Rangoon.

Rai Sahib M. GULAN SINGH & SONS, Multan, Am Press,
Lahore.

A. J. CORBRIDGE & Co., Bombay.

TARAPORNVAL, SONS & Co., Bombay.

RADHANATH ATMARAN SAGOOON, Bombay.

G. A. NAYAN & Co., Madras.

[facing p. I]

000

CENSUS OF INDIA, 1901.

VOLUME III.

THE ANDAMAN AND NICOBAR ISLANDS.

REPORT ON THE CENSUS.

BY

LIEUT.-COL. SIR RICHARD C. TEMPLE, BART, C.I.E.,

OF THE INDIAN STAFF CORPS

CHIEF COMMISSIONER OF THE ANDAMAN AND NICOBAR ISLANDS, AND

SUPERINTENDENT OF THE PENAL SETTLEMENT AT PORT BLAIR.



CALCUTTA:

OFFICE OF THE SUPERINTENDENT OF GOVERNMENT PRINTING, INDIA.

1903.

[p. I]

[p. II is blank]

PREFACE.

First Census Report on the Andamans and Nicobars.—Form of Report.—The Three Communities in the Islands.—Accuracy of the Returns.—Printing of Vernacular Words.—Bibliography.—I of the Andamans.—II of Barren Islands and Narcondam.—III of the Nicobar Islands.

122

First Census Report on Andamans and Nicobars.—This is the first attempt to make a "Census Report" on the Andaman and Nicobar Islands. In 1881 and 1891 a Census was taken on the lines of the General Census of India, but only of the Penal Settlement at Port Blair. And so it happens that the General Indian Census of 1901 is also the first occasion on which any formal attempt has been made, under the orders of the Government of India, to take a Census of the Andamanese and Nicobarese outside the Penal Settlement.

000

Form of Report.—In making this Report under conditions entirely at variance with those obtaining in India, I have been able, through the courtesy of Mr. H. H. Risley while Census Commissioner for India, to follow a line of my own on an agreement between us as to the general scheme I should adopt. This general scheme is shown in the contents bill of the Report. I think it is also right to say that circumstances have compelled me to compile it against time and in addition to the ordinary duties of my office.

The Three Communities in the Islands.—There are in the Andaman and Nicobar Islands three separate communities having no points of contact as regards the Census with each other and living under conditions belonging to entirely different stages of civilization. The Andamanese consist of tribes of naked savages only recently brought into general contact with civilised races. The Nicobarese are an old far-eastern semi-civilised people with an ancient trade. The Penal Settlement shows all the usual signs of a civilised community of the most advanced type. Each in fact presents separate phenomena with an interest of their own to the student and should be studied separately, and it is for this reason that this Report has been divided into three different parts:—I the Andamanese, II the Nicobarese, III the Penal Settlement of Port Blair. For this reason also it is intended that each part shall be complete in itself from the point of view of a Census Report.

Accuracy of Returns.—While it gives me great pleasure to testify to the scrupulous care and conscientiousness with which Mr. E. H. Man, C.I.E., Major A. R. S. Anderson, I.M.S., and Mr. H. H. D'Oyly carried out the difficult operation of enumerating the Andamanese and Nicobarese, it was impossible for them in the conditions to keep their results clear of the charge of inaccuracy, and circumstances also made it obligatory to conjecture the numbers of the Ōnge and Jarawa tribes among the Andamanese and of the Shom Pen among the Nicobarese. In this Report I have endeavoured to state fully the reasons for the conjectures and for estimating the amount of error in enumeration: also to point out how a greater approach towards accuracy may possibly be attained at the next opportunity and to what points special attention may then be profitably given.

Printing of Vernacular Words.—In printing this Report diacritical marks on Andamanese and Nicobarese words and names have been everywhere avoided

(iv)

100 and never used except where necessary to the meaning. Languages, entirely unknown to any but a very few local experts, present puzzles enough to the general reader without that increase of them which results from too strict a purism, and those desirous of a closer knowledge of pronunciation and form will find the romanisation employed fully explained in the sections on Language.

Bibliography.—A great deal has been written about the Andamans and Nicobars in the last twenty-five years, but the mass of information thus collected is scattered about in scarce Government Reports, in books chiefly rare and published in small editions, and in pamphlets and scientific journals not easy of access. In the bibliography attached an attempt is made at indicating a fairly complete collection of these notices of the Islands, and in the text of this Report to draw attention to points of interest and requiring further enquiry, or, what is quite as valuable, a collation of the printed information regarding them.

In the books, pamphlets and articles noted in the bibliography will be found many further references to information regarding the Andamans and Nicobars.

BIBLIOGRAPHY.

I. BIBLIOGRAPHY OF THE ANDAMAN ISLANDS.

BOOKS.

- 113 1669. Voyage de Gaul Schouten aux Indes Orientales.
 1800. Symes, Embassy to Ava.
 1825. Alexander, Travels from India to England : London.
 1836. Malcom, Travels in Southern Asia : London.
 1859. Selections from the Records of the Government of India, Home Department, Calcutta. No. XXV.
 1863. Mouat, Adventures and Researches among the Andaman Islanders : London.
 1871. Yule, Marco Polo : London.
 1877. Man and Temple, Lord's Prayer in the Bojigngijida (South Andaman) Language : Calcutta.
 1880. V. Ball, Jungle Life in India : London.
 1883. Man, Aboriginal Inhabitants of the Andaman Islands : London : (many references to older writers).
 1887. Portman, Andamanese Manual.
 1893-98. Portman, Record of the Andamanese : XI volumes M.S. in India Office, London, and Home Department, Calcutta.
 1898. Portman, Notes on the Languages of the South Andaman Group of Tribes : Calcutta (Government) : (many references to older writers).
 1899. Portman, History of our Relations with the Andamanese : Calcutta (Government) : (many references to older writers).
 1902. Kloss, In the Andamans and Nicobars : London.
 1902. Alcock, Naturalists in the Indian Seas : London.

JOURNALS.

- Anthropological Institute. Man (many) ; Lane-Fox (Pitt-Rivers) ; Thomson ; Portman ; Skeat.
 Asiatic Researches. Colebrooke (1794) ; Fontana (1800) ; Buchanan ; Leyden.
 Asiatic Society of Bengal. Blyth ; Tickell ; Fytche ; de Roepstorff ; Nevill (many) ; de Nicerville (many) ; Prain (many) ; V. Ball (many) ; Hoskyn.
 Bombay Natural History Society. Butler ; Cory.
 Calcutta Review. Temple ; Birch.
 Encyclopædia Britannica. Yule (Andamans) ; Temple (in Supplement, Andamans).
 Ethnological Society. Belcher ; St. John.
 Geographical Journal. V. Ball (1894).
 Indian Antiquary. Man ; Temple (many, including all the information in the India Office concerning Blair, Kyd, Ritchie and others in the Eighteenth Century) ; Portman.
 Journal des Savants (Paris). De Quatrefages, November 1884 ; February 1885.
 Microscopical Society of Calcutta, Holland.
 Philological Society. A. J. Ellis (1882).
 Royal Asiatic Society. Temple ; Man ; Portman ; Gerini.

113 Royal Geographical Society. Moust (1862); Yule; Portman; Temple; Man.

Royal Institution. Flower (Pygmy Races of Men: February 13, 1888)

Royal Irish Academy. V. Ball.

Society of Arts. Temple (1899).

Straits Branch, Royal Asiatic Society. De Quatrefages (1884).

Zoological Society, Godwin-Austen (1893).

MAGAZINES.

Botanical Magazine. Hooker, 1893.

Calcutta Monthly Register. November 1790.

Geological Magazine. V. Ball, February 1889; 1893.

Our Monthly, Rangoon, 1883.

Scottish Geographical Magazine, February 1889.

PAMPHLETS.

1879. De Folin. Mollusques des Isles Andaman: Bordeaux.

1885. De Quatrefages. L'Homme Tertiaire: Paris.

1896. Campbell. Anchylostomiasis in the Andamans: Port Blair.

1899. Temple. Theory of Universal Grammar, as applied to the South Andaman Language: London.

1899. Temple. Commercial Value of Wireless Telegraphic Communication with the Andaman and Nicobar Islands: Calcutta.

1901. Temple. Brief Account of the Andaman and Nicobar Islands: Port Blair.

1902. Miller. Mammals of the Andaman and Nicobar Islands (Smithsonian Institute, No. 1269): Washington, U. S. A.

REPORTS.

1858. Report of the Andaman Commission.

1864, onwards. Annual Administration Reports.

1867. Report on the Andamans: Colonel Nelson Davies.

1869. Annexation of the Nicobars: Colonel Man.

1872. Report on the Andamans: J. Scarlett Campbell.

1874. Report on the Andamans: Sir H. Norman.

1884. Report on the Geology of the Andamans: Oldham.

1885-86. Reports on the Topographical Survey of the Andamans: Hobday.

1886. Andaman Forests: Ferrars.

1886, onwards. Forest Administration Reports: Andamans.

1890. Report of the Commission of Sir Charles Lyall and Sir Alfred Lethbridge.

1890. Vegetation of the Andamans: Kurz.

1893. Cyclone Memoirs, No. V: Eliot.

1894. Prospects of the Andaman Forests: Temple.

1895. Forests of Stewart Sound: Buchanan.

1897. Report on the Nicobar Forests: Prevost.

SAILING DIRECTORIES.

1780. Dunn.

1809, and onwards. Horsburgh.

1874, onwards. Taylor.

1892, onwards. Bay of Bengal Pilot.

II. BIBLIOGRAPHY OF BARREN ISLAND AND NARCONDAM.

Barren Island and Narcondam, uninhabited, are included in the Andaman and Nicobar Administration and have an extensive bibliography of their own in scientific Journals and Magazines. 000

Mallet. *Memoirs of the Geological Survey of India*, XXI, 1885: Records of Geological Survey of India, Volume XXVIII, 1895 (with a valuable bibliography).

Dana. *American Journal of Science*, Volume XXXI, 1886.

Carpenter. *Records of the Geological Survey of India*, Volume XX, 1887.

V. Ball. *Volcanoes of the Bay of Bengal*, 1879 (from *Geological Magazine*, January 1879).

III. BIBLIOGRAPHY OF THE NICOBAR ISLANDS.

This is largely mixed up with that of the Andamans, but the following notes form a separate bibliography.

BOOKS.

- 1697. Dampier, *New Voyage Round the World*: London.
- 1733. Renaudot, *Mohammedan Travellers, (Arab Relations)*: London.
- 1785. Hunter, *Kingdom of Pegu*: Calcutta.
- 1810. *Lettres Edifiantes*: Volume XI: Toulouse.
- 1867. Maurer, *Die Nikobaren*: Berlin. (Valuable bibliography: English, Danish, German, 1799-1863).
- 1870. *Selections from the Records of the Government of India*, No. LXXXVII, *Nicobar Islands*: Government, Calcutta (valuable bibliography).
- 1871. Yule, *Marco Polo*: London.
- 1875. De Roepstorff, *Nicobar Vocabulary*: Calcutta, Government (valuable references, French, Danish, German).
- 1884. De Roepstorff, *Dictionary of the Nancowry Dialect*: Calcutta (valuable references to Danish works).
- 1888. Man, *Nicobar Vocabulary*: London.
- 1889. Man, *Dictionary of Central Nicobar Language*: London.
- 1894. Chavannes, *I Tsing's Travels*: Paris.
- 1896. Takakasu, *I Tsing's Travels*: Oxford.

JOURNALS.

- Anthropological Institute*. Man (many); Flower; Distant; Lane-Fox (Pitt-Rivers); Solomon; Skeat.
- Asiatic Researches*. Colebrooke (1794): Fontana, Volume III (1802); Hamilton, Volume II (1801).
- Asiatic Society of Bengal*. De Roepstorff (1870).
- Indian Antiquary*. Man (many); Temple (several).
- Internationales Archiv fur Ethnographie* (Leiden). Svoboda, (die Bewohner des Nikobaren-Archipels, 1893): (coloured plates and a Continental bibliography).
- Journal of the Indian Archipelago*. Chopard (Volume III, 1844).
- Philological Society*. A. J. Ellis (1882).
- Straits Branch, Royal Asiatic Society*. Blagden.

PAMPHLETS.

- 1612. Latrobe. *Letters from the Nicobars*.
- 1845. Busch. *Journal of the Schooner L'Espiegle*.

viii

000

1846. Barbe. Notice of the Nicobars.
1886. Flower. Nicobarese Skull: London.
1893. Man. Nicobar Pottery: London.
1894. Man. Narcotics in the Nicobars: London.

REPORTS

- 1870 and onwards. Administration Reports (especially for 1888-89).
1886-87. Topographical Survey of the Nicobar Islands. Strachan.
1897. Tour through the Nicobars (Forests). Prevost and Heinig.

SAILING DIRECTORIES.

1780. Dunn.
1809 and onwards. Horsburgh (especially 1836).
1874 and onwards. Taylor.
1892 and onwards. Bay of Bengal Pilot.

CONTENTS.

PART I.—THE ANDAMANESE.

CHAPTER I.—THE CENSUS.

THE CENSUS	1	000
MAPS—		
(1) The Andaman Group	to face page 1	
(2) The Census Tours	" 2	
(3) Tribal Territories	" 3	
(4) Density of Population	" 6	
(5) Density of Former Population	" 8	
APPENDICES—		
A. Census of the Andamanese; Chief Commissioner's Orders	11	
B. Reports of Census Tours—		
(1) First Tour: Diaries	15	
(2) Second Tour: Diaries	23	
C. Census Totals	26	
D. List of Places visited	27	
E. Table of Census Results by Places	29	
F. Table of Census Results by Tribes	30	
G. Tribal Distribution and Place Names	31	

CHAPTER II.—DESCRIPTIVE.

I. Geography	34
MAPS—	
(1) Contours of the Andaman Sea	to face page 35
(2) Andaman Straits and Channels	" 36
(3) Andaman Hills and Harbours	" 37
II. Meteorology	37
MAP—	
Rain Gauges	to face page 39
III. Geology	40
MAP—	
Earthquake Line	to face page 41
IV. History	44

CHAPTER III.—ETHNOGRAPHY

I. The Race	47
MAP—	
Divisions of the Andamanese	to face page 50
II. Physical Characteristics	53
III. Mental Characteristics	56
IV. Habits and Customs	61
V. Arts	66
APPENDICES—	
A. Points of difference between Andamanese and Semangs	67
B. Jarawa Raids on the Settlement	69
C. Jarawa Papers, 1903	69
MAP—	
Journeys in the Jarawa Country	to face page 83
D. Mr. Portman's Reports on the Onges, 1886	91

CHAPTER IV.—LANGUAGES.

I. General Description	96
II. Grammar	98
III. Etymology	100
IV. Phonology	115
V. Northern and Outer Groups	116
APPENDICES—	
A. Theory of Universal Grammar	123
B. Onge-Jarawa Words and Names	126
C. The Fire Legend Analyzed	137

PART II.—THE NICOBARESE.

THE CENSUS—

CHAPTER I.—THE CENSUS.

MAPS—

(1) Nicobar Islands	to face page 139
(2) Census Tours	" 140
(3) Dialects	" 142
(4) Increase and Decrease of Population	" 143
(5) Increase and Decrease by Language and Customs	" 143
(6) Increase and Decrease by Communication	" 143
(7) Density by Islands	" 143
(8) Density by Dialects	" 144
(9) Villages on Car Nicobar	" 146
(10) Villages on Chowra, Torres, and Bompeha	" 146
(11) Villages on Camorta, Nancowry, and Trinkat	" 146
(12) Villages on Katchall	" 146
(13) Villages on Great and Little Nicobar, Kondul, and Pale Milo	" 146

APPENDICES—

A. Local Census Totals, 1883	148
B. Abstract of de Roepstorff's Detailed Tables, 1889	149
C. Villages and Chiefs, 1901	148
D. Chief Commissioner's Orders	155
E. Chief Commissioner's Instructions	157
F. Chief Commissioner's Note	159
G. Reports and Diaries of Census Tours	180
H. De Roepstorff's Report, 1881	169
J. Car Nicobar. Return of Occupiers	175

CHAPTER II.—DESCRIPTIVE.

I. Geography	179
II. Geology	181
III. Meteorology	183
IV. History	183

APPENDICES—

A. Mr. E. H. Man's Report on the Penal Settlement in Nancowry Harbour, 1888	189
E. Extracts from Mr. E. H. Man's Report in 1890	187

CHAPTER III.—ETHNOGRAPHY.

I. The Race	199
II. Physical Characteristics	201
III. Mental Characteristics	204
IV. Religion	206
V. Social Customs	211

MAP—

Cocosnut Proprietary in Central Group, 1883 and 1901	to face page 214
VI. Arts	214
VII. Commerce	217

APPENDICES—

A. Dampier's Account of the Nicobars, 1688	221
B. The Oenary Feast of Car Nicobar	226
C. De Roepstorff's Tale of Shom	230
D. Authentic Cases of "Devil" Murders, Car Nicobar	232
E. Relations with the British	232
F. De Roepstorff's Note on the Shom Pen	240
G. Car Nicobar. List of Chiefs, 1896	241
H. List of Trade Articles valued in Cocosnuts	242
I. Trade Returns in 1887 (Nancowry Expedition)	243
J. Nicobarese Reckoning	244
K. Detail of Reckoning the Months	249
L. De Roepstorff's Calendar	250

CHAPTER IV.—LANGUAGES.

I. General Description	251
II. Grammar	255
III. Etymology	268
IV. Phonology	279
V. Comparative Dialects	280
VI. Comparative Philology	282

PART III.—THE PENAL SETTLEMENT.

THE CENSUS—

CHAPTER I.—THE CENSUS.

APPENDICES—

A. Census Tables, 1901	274
B. Census Tables, 1901	279
C. Census Tables, 1901	280

CHAPTER II.—DESCRIPTIVE.

I. Geography	180
--------------	-----

MAPS—

Penal Settlement of Port Blair	to face page 280
of Districts and Sub-divisions	281
Convict Distribution, Stations and Villages	282
Forest lands	283
II. Administration	283
III. History	285
IV. Language	285

APPENDIX—

A. Fundamental Principles of the Penal Settlement	405
---	-----

CHAPTER III.—ETHNOGRAPHY.

I. The Convict Body	505
II. The Labouring Convicts	575
III. The Self-supporters	577
IV. Sickness and Mortality among the Convicts	580
V. The Free Residents	579

APPENDICES—

A. Daily Labour Statement, Dry Season of 1901	492
B. Average Labour Statement for 1901—Purnia Day Workshops	493
C. —Female Jail	494
D. Results of Enquiry into the Caste History of the "Land Born"	496

INDEX	411
-------	-----

[3]

THE ANDAMAN GROUP

North Andaman

NORTH
ANDAMAN

MIDDLE
ANDAMAN

SOUTH
ANDAMAN

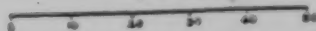
RITCHIE'S
ARCHIPELAGO

Barron Is.
(Nakara)

RUTLAND

LITTLE
ANDAMAN

English Miles



TEN DEGREE CHANNEL

[facing p. 1]

PART I. THE ANDAMANESE

CHAPTER I.

THE CENSUS.

Conditions of Census-taking.—Impossibility of Synchronous Census—Intelligent Assistance from Aborigines impossible—Hostile Tribes estimated only—Control of Operations—Census Tours—Method of Enumeration—Officers' Diaries—Method of estimating Onges and Jarawa—Attitude of the Andamanese—Points as to Defects in Enumeration—Jarawa Hostility—The Returns of the Andamanese—The former Population—Diagram of Past and Present Assumed Density—Methods of arriving at Former Density—The Kitchens—Middens—Future Prospects of the Race.

619
48+

Conditions of Census-taking.—The conditions under which a Census of the Andamanese was attempted were the following. In the first place there are Andamanese "Homes" in the Penal Settlement maintained by the Government, to which any Andamanese of any Tribe may come and stay as long as he chooses. In the next place, for reasons hereafter to be explained, practically all the tribes but one are "friendly" and are at the present time very much mixed up with each other. In this mixed condition they are nomads, much given to rapid wandering all over the islands of the group known as the Great Andaman, in which the Penal Settlement is situated. In their most imperfect condition of civilisation it was quite hopeless to expect to induce them to remain in any one place for even one night or for any given period. And thus the first great difficulty to combat in attempting to enumerate them was to prevent the same persons from being counted twice or more times over.

131

Impossibility of Synchronous Census.—This difficulty was increased by the impossibility, owing to the nature of the country they inhabit, from enumerating the people all at once or at anything approaching a uniform time. As will be seen later on, the Andamans consist of the Great Andaman group and the Little Andaman, attached to each of which are a great number of smaller islands and islets. There is also the inhabited North Sentinel at some distance to the west of the general group. The Great Andaman consists of five main islands running from north to south thus:—North Andaman, Middle Andaman, Baratang, South Andaman, Rutland Island. All these are dove-tailed into each other by very narrow straits, not so wide as the ordinary rivers of a continent. The Little Andaman is situated at a considerable distance to the south. All round the Great Andaman are islands of every size; to the east is Ritchie's Archipelago and to the west are the Labyrinth Islands. Every single island of the whole group is covered with a hilly jungle, the denseness of which must be seen to be appreciated, and passable only to its indigenous inhabitants. It is therefore impossible without much preparation and expense to traverse the interior of the islands, but happily it is quite easy to move about the deeply indented coasts, containing more harbours and snug anchorages than the whole Indian Peninsula. The length of the Great Andaman group is 156 miles: its average width is 9 to 10 miles and with the outlying islands some 25 miles. Two distant islands, Narcondam and Barren Island, to the east are also included in the Andaman group, but they are both uninhabited. It was, therefore, necessary to go over this area by coasting voyages, to stop at likely spots for encampments and to hunt about for the nomadic inhabitants of the neighbourhood: a work requiring much local knowledge, personal judgment and patience.

000

Intelligent Assistance from Aborigines impossible.—From the nature of the case it will be understood that very little reliance could be placed on the people themselves for assistance in the enumeration. Their inveterate, indeed necessary, habits of wandering, their childlike incapacity for responsibility of

000 any kind and their equally childlike way of doing whatever is pleasant for the moment in place of performing a duty, would effectually prevent this. So the best had to be made of skilled European but, of course, essentially alien agency.

619

609

Hostile Tribes estimated only.—Although the whole of the Tribes on the Great Andaman (with the exception of the Jarawas of the interior of the South Andaman and part of its west coast and of the interior of Baratang) are on the most friendly terms with us and with each other, it was quite impossible to go into the Jarawa country at all. So was it impossible also to visit, for Census purposes, the North Sentinel and the greater part of Rutland Island, likewise inhabited by the Jarawas, as these people are as inimical to other Andamanese as they are to Europeans or Asiatics generally—their hostility being exhibited equally to every stranger. Again, the Onge Tribe, closely related to the Jarawas, inhabiting the Little Andaman and the Cinque Islands, have only of late become friendly in part and to an unknown extent only, and it was not thought advisable to do anything that might disturb a desirable feeling of friendliness and confidence in us that is yearly increasing in strength, and thus it was decided to leave them alone also. These two Tribes, now the largest of the Andamanese, had to be left to estimates, such as a very long acquaintance with the people generally on the part of the local officers warranted.

000

Control of the Operations.—In the circumstances to be faced I took the control of the Andamanese Census into my own hands and selected three officers to carry out the work. Mr. E. H. Man, C.I.E., Deputy Superintendent of the Penal Settlement, now retired, Captain (now Major) A. R. S. Anderson, I.M.S., Senior Medical Officer of the Penal Settlement, and Mr. H. H. D'Oyly, one of the District Officers of the Settlement. Mr. Man's numerous and unique writings on the Andamans, resulting from his very long acquaintance with the Andamanese, and his many years' personal charge of them, pointed to him as the official most likely to succeed in arriving at a definite idea of the numbers of the aboriginal population. I also generally superintended myself as much of the actual work of enumeration as my many duties connected with the islands permitted.

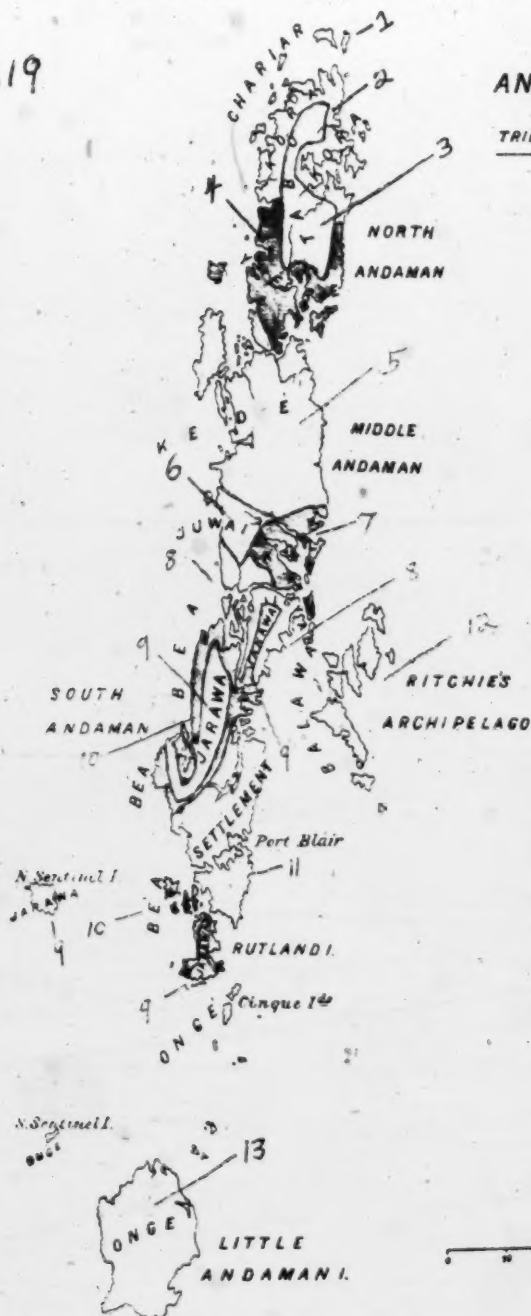
Census Tours.—It was decided that two separate tours should be undertaken round the Great Andaman. The first, in the R. I. M. S. *Elphinstone* accompanied by the large sea-going steam launch *Bess*, commenced at Port Blair on 25th January 1901 and lasted till 2nd February. The party proceeded up the east coast northwards, through the Archipelago, and down the west coast as far as Kwangtung Harbour (since renamed Port Anson by the Marine Survey). I was present during this tour myself and then had to proceed on duty to Calcutta in the *Elphinstone*. The business of the *Bess* was to accompany the *Elphinstone* everywhere and to go into passages and anchorages which were barred to the larger steamer. Kwangtung Harbour or Port Anson separates the middle and south Andaman Islands, and the *Bess* returned to Port Blair by the east coast through Homfray's Strait, the northernmost of the two dividing straits, picking up what additional information was possible on the way.

The second tour in the *Bess*, accompanied by the sea-going steam launch *Belle* of equal size, commenced at Port Blair on the 15th February 1901 and lasted till 18th February. The party proceeded northwards as before up the east coast to the middle strait, the southernmost of the two dividing straits, and thence to Kwangtung Harbour. It then proceeded down the west coast, through the Labyrinth Islands, round Rutland Island, to the Cinque Islands and thence to Bumila Creek in the Little Andaman, the occasion being taken to show as much civility as possible to a party of Onges. Thence the party proceeded home to Port Blair up the east coast. In this way was secured as comprehensive a circuit of the Andaman Islands as was possible in a short time and at a reasonable expense. In Appendix A will be found the detailed orders as to their tours, as they may be of use at the next Census; the operations at which, I apprehend, must be practically extensions of those undertaken this time. Attached to the orders are some notes on the navigation of the often very dangerous coasts of the Andamans and a sketch of the work performed daily.

619

ANDAMAN ISLAND

TRIBAL TERRITORIES.



NORTHERN TRIBES

- | | | |
|---|--------|-----------------|
| 1 | Charar | Purple (d'only) |
| 2 | Max | Blue |
| 3 | Tabo | Purple |
| 4 | Yee | Red |

MIDDLE TRIBES

- | | | |
|---|------|--------|
| 5 | Kear | Blue |
| 6 | Jung | Purple |
| 7 | Kol | Red |

SOUTHERN TRIBES

- | | | |
|----|------------------|--------|
| 8 | Bongvab | Blue |
| 9 | Jarawa | Purple |
| 10 | Bea | Red |
| 11 | Penal Settlement | White |

ARCHIPELAGO

- | | | |
|----|--------|--------|
| 12 | Belawa | Purple |
| 13 | Onge | Blue |

English Miles.



[facing p. 3]

[numbers added to replace colors. -- Analyst]

000 **Method of Enumeration.**—The actual method of enumeration was to select carefully from the Homes and attach to the Census officers the most intelligent of the Andamanese, who had lived there for years and were therefore conversant with Europeans and their ways and had acquired, by direct education or long contact with civilization, habits of restraint and obedience to orders. These men were employed all along the route in tracing the whereabouts of their people and in collecting information about themselves and their families. The information thus collected was carefully sifted, an operation requiring patience and much local knowledge, and entered in tabulated forms specially supplied. These forms showed the places at which information was procured, and the number of men, women, boys and girls, tribe by tribe, found by enquiry to be there. In my opinion this was all that could be reasonably attempted in the circumstances, and I limited the enquiry to this extent on the ground that it was better to attempt to do a little reasonably well than to attempt a Census on a scale that the conditions did not fairly permit.

Officers' Diaries.—Each officer was required to keep a diary and to record therein everything of interest that came under his observation, with the view of taking advantage of the tours to collect all the miscellaneous information that could be acquired in the time available. Maps were also supplied on which officers were required to enter every camp and inhabited place they heard of and especially every Andamanese place-name they ascertained. This last was of value, because to the Andamanese any but their own names for places are unintelligible. The chief results of the enquiries are recorded in the officers' reports attached in Appendix B.

161 **Method of estimating Onges and Jarawas.**—As to the two Tribes, 619 Onges and Jarawas, of whom no attempt was made at a direct enumeration, it is necessary to explain the method of arriving at the assumed figures for them. The people best known to us are those of the southern islands of the Great Andaman group, the population of which is now very small from causes that will be hereafter examined. The figures for these tribes (Kede, Juwai, Kol, Bojigwab, Balawa, Bea) were taken as a basis upon which to build up figures for the Onges and Jarawas respectively as being something definite to go upon.

The Onges have not been brought under the influence of the causes that have led to the depopulation of the areas occupied by the Southern Andaman Tribes and are known to be much more numerous. Taking this fact into consideration and also the area of their occupation, it has been assumed that their numbers reach to three times the present totals for the above named Tribes. In dividing up the figures thus arrived at into sexes, there is no particular difficulty as regards adults, though that gives males 11 per cent. in excess of females, but there is much difficulty as regards children. In the present abnormal condition of the Southern Andaman Tribes the children are very few indeed, shown in the Census figures as only 24 per cent. of the adults, and among them, too, the males are shown as being nearly twice as numerous as the females. These are conditions impossible under the normal circumstances of a population maintained without extraneous immigration, and though for the purposes of calculation on a given basis, I allowed the figures to be returned officially for the Onges as under—

ADULTS.		CHILDREN.		TOTAL.
Males.	Females.	Males.	Females.	
303	273	63	33	672

I do not believe the details to correctly represent facts, which among the Onges, presumably still existing under conditions normal to themselves, are more approximately arrived at, I think, on the following lines. Savage populations very quickly reach the limit of increase, that limit depending on their method of gaining a livelihood in the area they occupy. In other words, as long as savages adhere to their habits of life, the population remains stationary after a short period of occupation of a new territory. As regards the Andamans, until lately, as with the Nicobars, the population has, I think, for the above reasons been stationary through all historical times and long before that at very small figures. For reasons given below I should now place the totals for the Onges somewhat higher than has been above arrived at, and I would divide them up nearly

161
619

equally into adults and children and again nearly equally into sexes with a slight preponderance in favour both of children and females. Say, as under—

ONGES.

ADULTS.		CHILDREN.		TOTAL.
Males.	Females.	Males.	Females.	
153	173	178	168	672

The Jarawas, more than probably old Onge emigrants from the Little to the Great Andaman and become separated from the main Tribe, occupy portions of Rutland Island, the interior of part of the South Andaman and of Baratang and all the North Sentinel. The figures for them have been assumed on three distinct bases. Those in the South Andaman and Baratang and those in North Sentinel have each been taken to be as numerous as the enumerated population of the other South Andaman tribes, i.e., as equal in numbers to the Bea, Balawa, Bojigiyab and Kol Tribes, and those in Rutland Island, on the same grounds as the Onges, to be three times as numerous as the South Andaman Tribes above named. These assumptions give the following figures:—

JARAWAS.

In South Andaman and Baratang.	In North Sentinel.	In Rutland Island.	TOTAL.
117	117	351	585

As regards the figures thus arrived at, circumstances which have occurred since the Census strongly support their general correctness for the South Andaman and Baratang. Arguing on the same lines as in the case of the Onges, I believe the conditions in the North Sentinel would support about 117 people and not more, and that the figures for Rutland Island are somewhat too highly placed. For reasons given below, it is probable that the Jarawas have been placed about 100 too high and the Onges about 100 too low: the general total for all the Tribes being most likely about right. In reference however to the details of the Jarawas as returned at the Census, viz.:—

JARAWAS.

ADULTS.		CHILDREN.		TOTAL.
Males.	Females.	Males.	Females.	
280	210	55	40	585

I feel sure from what has since transpired that the children do somewhat outnumber the adults and the females the males, and I would on the Census returns divide up the Tribe as follows:—

JARAWAS.

ADULTS.		CHILDREN.		TOTAL.
Males.	Females.	Males.	Females.	
126	146	162	151	585

Again, when dividing the above figures up into their three elements, recent expeditions support the figures then reached as regards the South Andaman at any rate, thus:—

JARAWAS.

	ADULTS.		CHILDREN.		TOTAL.
	Males.	Females.	Males.	Females.	
South Andaman and Baratang . . .	25	29	32	31	117
North Sentinel . . .	25	29	32	31	117
Rutland Island . . .	76	88	98	59	351
TOTAL . . .	126	146	162	151	585

This table fully bears out the fact, now locally recognised as probably true on other grounds, that the number of Jarawa fighting men, who have done so much damage in the jungles on the outskirts of the Penal Settlement for so many years past, are very few, probably not more than 30, and that the entire strength of the Tribe in the South Andaman is not more than about 120.

Attitude of the Andamanese.—The attitude of the people towards the Census was interesting. Several of the civilised Andamanese of the Homes took an active interest in the proceedings and a great deal of trouble in going into places where Europeans could not follow; at Port Cornwallis traversing the jungles from the east to the west coast for us. One or two were of the greatest assistance. Of the people met with on the tours none showed the least objection to delivering up the names of their relatives and friends and their probable abode at the time, i.e., so far as their treacherous memories and innate mental carelessness and haziness permitted. They could of course never give up numbers, as the wild untrained Andamanese cannot count at all nor does his language include numbers. 000

A plan was tried, for checking names ascertained and numbers assumed for the people of the interior not seen by the Census party, of giving coloured beads to an intelligent man, *Boya alias* Snowball, and using these for enumeration thus. He is a Chariar, the tribe of the extreme north, and at the end of the first tour he was started up the east coast above Homfray's Strait to traverse the interior of the Middle Andaman and North Andaman and note every person he met, who had not been seen during the tours, by means of the beads. There were four distinct colours of beads and each colour was shown him respectively for men, women, boys and girls. These beads were in one bag and he had an empty one also; and he was to transfer from the full to the empty bag a bead, colour by colour, for each person he met. After a little practising he was sent off, and as he had been a long while at the Home and took an absorbing personal interest in the Census, much was hoped from the plan and the party were not disappointed.

It will be understood that the actual enumeration proceedings with the people were as informal as possible and they were humoured in every practicable way. Thus they were fed up with what they consider luxuries, rice, sugar, biscuits, tea, tobacco, pipes and so on. Archery matches, games, fish-shooting (with arrows), pig-hunting, photographing, anything they fancied was got up on the spur of the moment and the Census tour necessarily took the form of a tour of amusement and sport, but in the midst of the fun the Census officer was ever present with his note-book and his apparently casual questions. Although the procedure enabled us to collect all the information procurable from a wild but friendly and happy population on the points required, it had one drawback. Canoe loads of Andamanese would follow us from anchorage to anchorage, knowing from experience where we were likely to stop, and quite innocently give the same names again and again to our Census enquirers. A sifting of the notes and recognition of faces, however, I think prevented any practical harm accruing from this source.

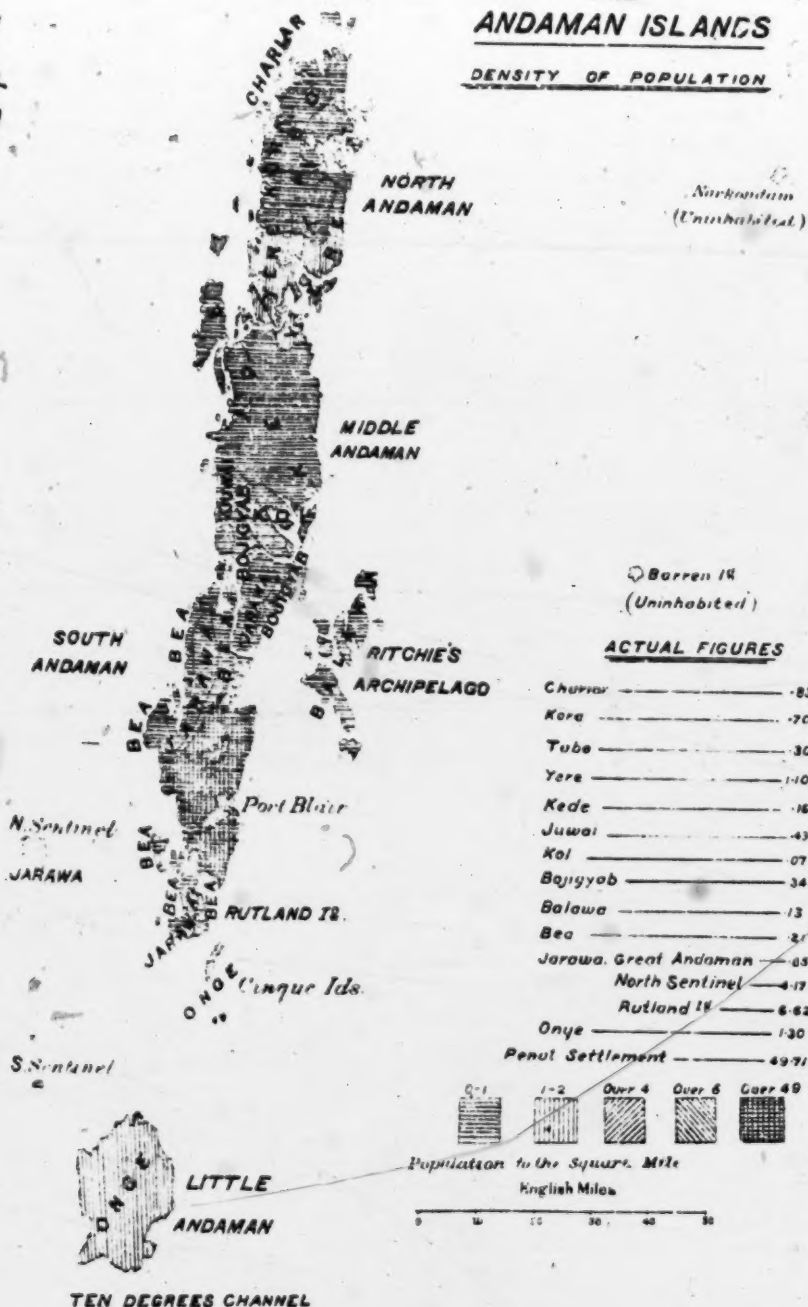
Points as to Defects in Enumeration.—The aged, the sick, those engaged in pig-hunting in the interior (a matter of great practical importance as well as of sport to the Andamanese) we did not see—nor did we see any children except those who could accompany their parents. In the case of the absent adults it is likely that most of the names were delivered up, but I think it likely that a good many children in the North Andaman at any rate and especially of the "new" Tribes were not enumerated.

Jarawa Hostility.—There was never anywhere anything disagreeable whatever, except at one spot where a large party of Jarawas was met with. This was a purely accidental meeting in this way. The habitat of the Jarawas, who have no boats, is in the South Andaman, in the interior of the island. The coasts are the territory of the Bea Tribe. But as the Bea Tribe is now very much reduced and chiefly inhabits the Home at Port Blair, the Jarawas on the west coast pay uncertain visits to the seashore at several points. Port Campbell is one of these points, and it was while anchoring here and going towards the shore to see if any friendly, that is Bea or "Home," Andamanese were about, that an unintentional approach was made to a Jarawa hunting camp, which persistently attacked the Census party until driven off by fire arms with the loss of one of their party. The story of this affair is detailed in Appendix B.

Returns of the Andamanese.—As regards the Andamanese no difference was made between the provisional and the final returns, the Census figures for the Andamanese, provisional and final, being as stated in the accompanying table.

COCO CHANNEL

THE

ANDAMAN ISLANDSDENSITY OF POPULATION161
162
619

[facing p. 6]

ANDAMAN ISLANDS.

FIGURES FOR THE ABORIGINES CENSUS, 1901.

Name of Tribe.	ADULTS.		CHILDREN.		TOTAL.	Occupied area in square miles.	Density per square mile.
	Male.	Female.	Male.	Female.			
	No.	No.	No.	No.	No.	No.	
Chariar	16	15	6	2	39	47	·83
Kôra	31	32	14	19	96	137	·70
Tabô	15	16	7	10	48	158	·30
Yère	98	80	26	14	218	198	1·10
Kede	24	30	3	2	59	371	·16
Juwai	21	19	7	1	48	110	·43
Kol	6	2	3	...	11	161	·07
Bojigvab	31	14	2	3	50	148	·34
Balawa	5	10	3	1	19	141	·13
Bea	14	16	3	4	37	117	·21*
Jarawa	280	210	55	40	585	220	2·66
Onge	303	273	63	33	672	373	1·30
TOTAL	844	717	192	129	1,882	2,161*	·86

* Excluding occupied area of the Settlement 327 square miles.

In the above table the Jarawas should be divided between the Great Andaman, North Sentinel and Rutland Island. Thus divided, the special table for them is as under:—

JARAWAS.

	Occupied area in square miles.	Population.	Density per square mile.
In Great Andaman	139	117	0·85
In North Sentinel	28	117	4·17
In Rutland Island	53	351	6·62

The density figure thus arrived at is, I think, about right for the Great Andaman and I am not prepared to say that it is far wrong for the North Sentinel, but it is probably a good deal too high for Rutland Island, i.e., it would appear from this argument that the whole population of the Jarawas have been placed at too high a figure.

It will be noted that the above figures give a density of population among the aborigines of less than one per square mile, not an unlikely fact. Commenting generally on these returns I should say that the figures for the Kede, Juwai, Kol, Bojigvab, Balawa and Bea tribes are right; so much is known about them that statements of the people as to themselves are not difficult to check. But I think it likely that the Chariar children are understated. I am not prepared to be positive as to this, however, as this Tribe, too, is well known and understood. The Yere children are probably much understated, though from what is known of this Tribe it is likely that the adults are greatly in excess of the children.

I was present when in 1900 the Kora were discovered, or to speak more accurately differentiated. They had been previously well known, themselves and their encampments, but had been considered to belong to the Chariar. The discovery as to the true facts—that they were a separate Tribe with a territory and language of their own—so late as 1900 is an example of the difficulty in procuring accurate information from such primitive savages as the Andamanese. It mattered nothing to them that Kora men and women had been to the Home at Port Blair and had been classed as Chariar. All they thought of the matter was that the sahibs held them to be Chariar, but that they and all the Andamanese knew better! In this case I think it likely that a similar error has been made as regards the children as in the case of the Yere Tribe.

In regard to the Tabo of the interior of the North Andaman, whose existence was unsuspected by us until the Census, the figures given must be taken with some caution, despite the native explanation of the cause of the destruction of

162 the Tribe, that they killed each other off in consequence of the introduction of
619 contagious disease amongst them by the Chariar or Kora Tribes. It is somewhat difficult to believe that even a savage Tribe would actually kill off the sick to such an extent as to reduce themselves to half a dozen families or hunting camps. Even then the children would not be affected by the process and should in such case be much more numerous than the adults, but they are recorded as being in a minority of nearly 55 %. It is probable that both the figures for the adults and the children are in this case understated.

Criticisms on the figures for Onges and Jarawas have already been made.

Taken all round, however, the totals for the whole of the Andamans are not likely on the above grounds to be very far wrong and to my mind an estimate of 2,000 is about correct for the existing population of this primeval and most interesting race. At the next Census it will possibly be practicable to arrive at more accurate figures in the light of the present experience by carefully considering how the defects noticed on this occasion can be remedied.

161 **Former Population.**—It has been well known for years past that the
162 Andamanese population was even a generation ago far more numerous than it is
619 now and proceeding on the general principles followed in the remarks above made, it seems to me that a fairly accurate estimate of the old normal population can be arrived at. The principles governing the estimate would be—

- (1) the population has always been stationary,
- (2) the population has been limited by habits as to food production and by the area of productive occupation,
- (3) the relative size of the Tribes as gauged by their present strength combined with exposure to devastating contagious or infectious diseases,
- (4) the capacity of each Tribe to hold its own with neighbouring Tribes.

On these grounds I estimate the combined Ōnge-Jarawa Tribe as having been always of its present estimated strength and the other Tribes as under, keeping to the further principle that the adults and children have always been about equal and that the sexes also have been about equal: preponderance in favour of women over men and of male over female children.

ANDAMAN ISLANDS.

ESTIMATES OF THE OLD NORMAL POPULATION.

Name of Tribe.	ADULTS.		CHILDREN.		TOTAL.	Occupied area in square miles.	Density per square mile.
	Male.	Female.	Male.	Female.			
Chariar	20	25	30	25	100	47	2.13
Kora	105	120	140	135	500	137	3.65
Tibb	40	50	60	50	200	158	1.27
Yera	150	165	200	185	700	198	3.50
Kede	105	120	140	135	500	371	1.35
Juwai	60	75	90	75	300	110	2.73
Kol	20	25	30	25	100	161	0.62
Bojigrah	60	75	90	75	300	148	2.03
Balawa	60	75	90	75	300	141	2.12
Ba	105	120	140	135	500	444*	1.13
Jarawa	130	140	170	160	600	220†	2.73
Ōnge	150	165	200	185	700	373	1.83
	1,005	1,155	1,380	1,260	4,800	2,508	1.91

Males—2,385 Females—2,415=Total 4,800.

Adults—2,160 Children—2,640=Total 4,800.

* Including 327 square miles now occupied by the Penal Settlement.

† The Jarawa density being divided up as per foot-note to paragraph three:—

80) Great Andaman.
417) North Sentinel.
80) Rutland.

COCO CHANNEL

ANDAMAN ISLANDSESTIMATED DENSITY POPULATION
BEFORE BRITISH OCCUPATIONNarkondam
(Uninhabited)

Estimated decreased Population Blue

Estimated Stationary Population Red

MIDDLE
ANDAMANBarren Is.
(Uninhabited)

RITCHIES

ESTIMATED FIGURES

ARCHIPELAGO

Chariar	213
Kora	365
Tabo	127
Yera	350
Keda	135
Julwai	273
Kol	62
Bojigwab	203
Balawa	212
Bea	113

SOUTH
INDAMAN

N. Sentinel

RUTLAND IS.

Cingue Ids.

JARAWA Great Andaman	86
N. Sentinel	417
Rutland Is.	632
Onga	198

S. Sentinel



Population to the Square Mile.

English Miles.

LITTLE
ANDAMAN

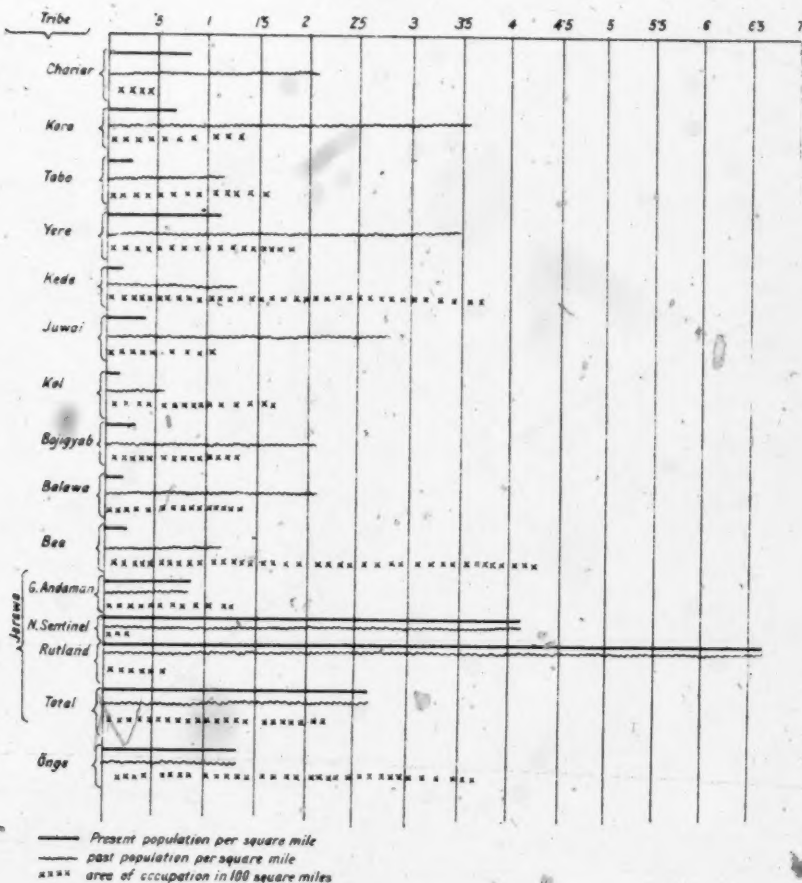
TEN DEGREES CHANNEL

[facing p. 8]

I feel pretty sure that the indigenous population of the Andaman Islands was at no time higher than 5,000 and that it was for many centuries stationary. The density figures also work out to about two to the square mile and that, too, I think a reasonable figure to adopt for the old indigenous population before contact with Europeans.

Diagram of Past and Present Density.—Proceeding to put the conjectures arrived at above to the further test of a diagram illustrating the present and past assumed density of the Andamanese Tribes compared with the area actually occupied by each Tribe, the following facts are arrived at.

DIAGRAM ILLUSTRATING PRESENT AND PAST ASSUMED DENSITY OF THE POPULATION OF THE ANDAMANESSE TRIBES WITH AREA OCCUPIED BY EACH.



161
162
619

From this diagram it becomes pretty evident that the Jarawa population for Rutland Island has been assumed at too high a figure, both for the past and present time. At the same time I think that it is equally probable that the population of the Onges has been underestimated. Taking all the calculations and known facts into consideration, my own opinion is that the assumptions for the Andaman population as a whole, both for the past and the present are probably near the truth, but that we should decrease the Jarawa estimate for Rutland Island (and to that extent the whole Jarawa population) by 100, and increase the Onge estimate by 100.

Method of arriving at Former Density.—Portman, *History of our relations with the Andamanese*, Volume I, page 16, gives the following reasons for holding the Andamanese population to have been formerly stationary:—

"When we consider that some Andamanese have no children, very few have more than three, the majority of the children die in infancy, and the grown-up Andamanese revenges the slightest injury to his person or property or even a fancied insult by a murder and also that the Tribes were continually at feud with each other, I think we may say the above estimated population (his estimate is 8,000) to be the average for many centuries past."

This is an overstatement, as in the first place it is necessary in a stationary population for each couple to produce on an average two children, who grow up and produce again in their turn, and in the next place, though an Andamanese will murder on, to us, extremely slight provocation, he is not a murderous variety of mankind and in tribal "wars" the bloodshed at each collision is very small indeed. In the next place, as Portman himself observes, the average number of children to a married woman was three, while instances of seven and eight children of one mother have been recorded. The statement is however an interesting one, as an observation on these primitive savages and their ways and as indicating the causes for the population being kept stationary.

161
172

The Kitchen-Middens.—Portman also points out (*op. cit.*, p. 17) that an estimate of the old population can be arrived at from locating and enumerating the existing kitchen-middens of the Andamanese, on the assumptions that each midden represents the head-quarters of a Sept of 30 people and that apparently each Sept, owing to the habits of the people, would require four to five such head-quarters. A population of 5,000 would therefore require, say, 600 middens, i.e., there should be a midden to every four square miles of territory.

The value of the kitchen-midden argument comes out thus:—(1) The size, 50 feet diameter usually, does not permit more than 30 people to live on it; (2) change of head-quarters is frequently necessary owing to (a) monsoons, (b) exhaustion of food in the neighbourhood, (c) nomadic instincts, (d) stench from discarded food thrown around. As a matter of practice the Andamanese do not return for three months after they have left a midden, nor for about a year after a death in one, and occasionally they abandon a midden for many years, and cannot occupy one for more than a few weeks at a time from the stench about it. These considerations fix four as the smallest number of middens per 30 people.

The middens also beyond all doubt prove that the Andamanese are now as they were an exceedingly long time ago. There are but few "newer" middens, and the older ones show great age: newness and age being gauged by height. The antiquity of the old middens is proved by the fossil shells at the base. Now, except that certain shell-fish have been fashionable at one period and certain others at another, the kitchen-middens show that the Andamanese finds his food to-day as he did in the days when the now fossilised shells contained food for him. At the base of the middens are found the same refuse and the same pottery as we find shown on the surface to-day.

Here then we have a people unaltered in habits from primeval time and whose numbers, if these premises be correct, we should be able to estimate from existing data, as they must have been stationary through all time.

The questions on this argument really are therefore:—(1) how many middens are there? (2) where are they? To these questions it is worth while obtaining answers at the next Census or even as opportunity occurs, as the answers will either upset the theory or afford an approximate estimate of the old Andamanese population and of the strength of each tribe.

161
165
Future Prospects of the Race.—It is now 26 years since I first became acquainted with the Andamanese, and I was present amongst them in one of the great devastating outbreaks of infectious disease (measles introduced by convicts from Madras) in 1877, and I personally know how much more numerous they were then than now. The one sad result of the Census has been to demonstrate beyond all doubt, what most local officials suspected and some asserted, that infectious and contagious diseases, the result of contact with an advanced civilisation, are wiping out the Andamanese: at any rate the friendly sections of them. With a population so diminished in one generation and a birth-rate so inadequate, it is obviously impossible, unless the people have reached or are about to reach that point of saturation with these diseases which is also the point of immunity and recovery from their effects, for the race to last out much longer. Excluding the Onge-Jarawas, all the other tribes now number, on any reasoned calculation, not more than 700, of which some 250 belong to one Tribe, the Yere, out of an estimated total of 3,500 only a generation ago, while the children cannot in any case be much more than 25 per cent. of the adults. On these figures, in two more generations, i.e., in probably less than 60 years, even if undisturbed and unmolested by the Jarawas ever-increasing in relative strength, the friendly Tribes must die out. A century must be taken as the extreme limit of a forecast of their existence, unless of course the law of saturation with disease to the point of immunity comes into play.

It also seems not difficult to foresee that it is possible that in a short time the Great Andaman will be occupied by the Penal Settlement and the Jarawas only, with a chance, in the case of the latter becoming friendly and losing their exclusive bearing, that they too will succumb to a rapid disappearance, through what may be called the natural action of infectious and contagious disease, not necessarily carried to them by the civilised alien, but more probably, as past experience shows, by diseased members of the remnants of the "friendly" Tribes captured in collisions with them.

There is nothing new in the disastrous effect of infectious or contagious disease on savages when introduced among them for the first time. It seems to be a process of nature not to be seriously checked by administrative measures. From the very first instructions of the Marquess Wellesley to Archibald Blair in 1789 to the existing practice in dealing with the Andamanese, there has never been any change in the general policy maintained towards the aborigines of the islands. They have been treated uniformly with kindness and consideration. From the first recorded hostile brush with them in 1787 to the operations ending with the gallant death of Mr. P. Vaux on 24th February 1902, nothing more has ever been done than was necessary to prevent murderous raiding into the lands under active occupation by ourselves. It is disease introduced by the carelessness and callousness of civilised individuals in the first instance and spread broadcast amongst the savages by their own ignorance in the next place that has worn down their actual numbers to one-fifth of the former total in one generation and has apparently now rendered the union of the sexes infructuous in three-fourths of the cases.

APPENDIX A.

CENSUS OF THE ANDAMANESE, 1901.

CHIEF COMMISSIONER'S ORDERS.

1. The Census of the Andamanese outside the Penal Settlement will be undertaken by Mr. E. H. Man, C.I.E., with the assistance of Captain A. R. S. Anderson, I.M.S., and Mr. H. H. D'Oyly during two tours round the Andaman Islands. 050

2. Mr. Man will draw up a list of the Andamanese words that are likely to be required by his assistants for the Census, and furnish a copy to each of them.

3. Mr. Man will also supply competent guides each to Captain Anderson and Mr. D'Oyly while separated from himself.

4. Each officer will be supplied with the necessary forms and a note-book and pencil; and each officer will keep a diary of his proceedings and record therein all matters of interest observed during the tours. A set of maps also will be taken on which should be entered daily the locality of every inhabited place ascertained during the tours and also every Andamanese place-name that comes to notice.

5. The procedure of recording the Census will be to make such enquiries as are possible at every camp visited and from the people met *en route*, and from the information thus received to fill in the accompanying form. Nothing more can be done and nothing more should be attempted.

FORM A.

FOR THE CENSUS OF THE ANDAMANES OUTSIDE THE PENAL SETTLEMENT.

Serial number of sheet _____

Information procured at _____ in _____ Island.

Serial number of place in next column.	Name of place as to which information is procured.	Island in which it is situated.	Number of people assumed to be there of the Tribe in the next column.					Name of Tribe.
			Men.	Women.	Boys.	Girls.	TOTAL.	
Total for all Tribes								

NOTE.—The names of the Andamanese Tribes to be contained in this form are Aka-Bee, Bojigyah, Balawa, Kot, Kede, Charax, Yere, Kora. The Ouge and Jarawa Tribes will be estimated separately.

6. The Ouge Tribe will be added to the figures obtained as above on the assumption of their being three times as numerous as the enumerated Andamanese.

7. The Jarawas will be added to the figures obtained as above on the following assumptions:—

- (a) Those in the South Andaman as being as numerous as the counted population of South Andaman.
- (b) Those in North Sentinel Island on the same assumption.
- (c) Those on Rutland Island on the same assumption as that for the Ouges.

8. The programmes of the tours will be as follows, wind and weather permitting. The speed of the launches is assumed for the present purpose to be about seven knots.

TOUR I.

9. The R. I. M. S. *Elphinstone* accompanied by the steam launch *Bess* will leave Port Blair on the 25th January 1901.

10. PROGRAMME FOR THE ELPHINSTONE.

25th January.—Port Blair to Celebrooke Passage. 33m.

26th " To Outram Harbour *via* Diligent Strait. 15m.

27th " To Stewart Sound. 44m.

28th " To Port Cornwallis. 33m.

29th " To East Island. 27m.

30th " To Temple Sound *via* Clough Passage. 17m.

31st " To North Reef Island. 27m.

000

1st February.—To Kwangtung Harbour. 50m.
 2nd " To Calcutta, arriving 5th February. 705m.
 Total mileage for *Elphinstone*. 951m.

11. PROGRAMME FOR THE BESS.

25th January.—Port Blair to Kyd Island. 19m. 3 hrs. To Colebrooke Passage. 18m. 5 hrs. Total 37m. 6 hrs.
 26th " To Outram Harbour *via* the Archipelago, through the Tadmra Juru Strait between Peel and Havelock Islands and Kwangtung Strait. 37m. 5½ hrs.
 27th " Stewart Sound (Bacon Bay). 41m. 6½ hrs.
 28th " Port Cornwallis *via* Lamia Bay. 41m. 6 hrs.
 29th " Temple Island *via* Turtle Island anchorage. 23m. 4 hrs. Cadell Bay Sm. 1 hr. East Island 12m. 2 hrs. Total 43m. 7 hrs.
 30th " Temple Sound *via* Cleugh Passage. 18m. 3 hrs.
 31st " N. Reef Island *via* Casuarina Bay. 32m. 5½ hrs.
 1st February.—Kwangtung Harbour *via* Interview Passage. 60m. 10 hrs.
 2nd " Elphinstone Harbour *via* Homfray Strait. 10m. 2 hrs.
 3rd " Port Blair *via* Colebrooke Passage, 41m. 6½ hrs.
 Total for the *Bess*: ten days' tour of about 356 miles in about 55½ hrs. under steam at about seven knots.

12. NOTES AS TO NAVIGATION FOR THE CENSUS PARTY DURING TOUR I.

25th January.—There is a bar off the entrance to Shoal Bay near Kyd Island, which must be considered in entering and leaving. You should anchor right inside Colebrooke Passage at the anchorage marked on our private chart. There is a well-known camp just opposite the anchorage and one further up the creek, which is really the Colebrooke's Passage into Elphinstone Harbour.

26th January.—On passing through the Tadmra Juru Strait between Peel and Havelock Islands from the west, you should go well out to eastwards, as the reef of John Lawrence Island runs out a long way. "Pilot Rock (1844)" is I think a myth. There is a private chart of Kwangtung Strait. It has plenty of water. There is a large camp near the middle on the east side. In Outram Harbour there is a nasty bar most of the way across. It is best to anchor outside the bar. There is a well-known camp on the inside of the eastern arm of the Harbour.

27th January.—In Stewart Sound anchor in Bacon Bay at the anchorage shown on the private chart. The entrance to Ar-tin Strait is some miles to the south, with a shallow mud bar at the entrance which has very little water over it at low tide. There is plenty of water in the Strait. The western entrance is bad. There is a camp about half way through on the southern side.

28th January.—There is a large camp in Lamia Bay and one on the north side of Port Cornwallis.

29th January.—Turtle Island anchorage is shown on the private chart. There is a camp inside the creek off Temple Island, just inside the entrance to port as you enter. Cadell Bay is a good spot to enquire about camps along the coast to Cleugh Passage. There is a camp on each side the anchorage between East and Landfall Islands.

30th January.—Cleugh Passage requires careful navigation and the tides are very strong with ripples and overfalls. At Temple Sound there are three camps on Paget Island and there are camps all along the Coast from the western end of Cleugh Passage.

31st January.—There is a camp on north Reef Island and a large one in Casuarina Bay. The Coast off Austin Strait is not fit for the *Bess*.

1st February.—There are always natives in Interview Passage, but the launch should be stopped there with care. The south entrance has much fool ground about. There are two camps in Kwangtung Harbour: one on the north entrance to the harbour and one further in towards Homfray Strait.

2nd February.—The western entrance to Homfray Strait is not easy and the tides are very strong. There is a camp half way on the northern side. The eastern entrance is very shallow at low tides. The anchorage in Elphinstone Harbour is at the point marked 10 f. in the charts. North Button Island gives a safe straight run out from the anchorage.

3rd February.—There is a bad rock in the creek leading to Colebrooke Passage about half way.

13. THE WORK TO BE DONE DAILY.

The following is a sketch of the work to be performed daily during Tour I.

25th January.—The *Elphinstone* will start for Colebrooke Passage direct so as to reach about noon. The *Bess* will start at 4 A.M., so as to reach Kyd Island at 7 A.M., remain five hours and start again at noon, reaching Colebrooke Passage at 3 P.M. Messrs. Man and D'Oily will embark on the *Bess* and Captain Anderson on the *Elphinstone*. Enquiries will be

made at the Duratung Home on Kyd Island by Messrs. Man and D'Oyly and at the camp in Colebrooke Passage by Captain Anderson. The steam gig of the *Elphinstone* will be required in Colebrooke Passage. 050

26th January.—The *Elphinstone* will start for Outram Harbour direct so as to reach at noon. The *Bess* will start at 6 A.M. for Tadmra Juru Strait between Peel and Havelock Islands and then pass through the Kwangtung Strait so as to finally reach Outram Harbour about 4 P.M. This should give about 4½ hours for enquiries at the camp in the Tadmra Juru Strait and Kwangtung Strait. Messrs. Man and D'Oyly will be in the *Bess* and Captain Anderson in the *Elphinstone*. Captain Anderson will make the enquiries at the camp in Outram Harbour.

27th January.—The *Bess* will leave at 5 A.M. so as to arrive in Stewart Sound by 11 A.M. to be followed by the *Elphinstone* timed to arrive at the same hour. All the Census officers will travel in the *Elphinstone*. Arrived at Stewart Sound, the various points in the Harbour itself will be examined and also the camp in Austin Strait. Captain Anderson will examine Austin Strait and Messrs. Man and D'Oyly, Stewart Sound. The steam gig of the *Elphinstone* will be required for this service.

28th January.—The *Bess* will proceed in the early morning to Lamia Bay and the *Elphinstone* to Port Cornwallis: Captain Anderson in the *Elphinstone*, Messrs. Man and D'Oyly in the *Bess*. Enquiries will be made at Lamia Bay and in the Harbour of Port Cornwallis. The *Bess* should reach Port Cornwallis so as to have at least one hour's daylight there after anchoring. The steam gig will be required.

29th January.—The *Bess* will proceed at 5 A.M. to Temple Island *via* the Turtle Island anchorage with Messrs. Man and D'Oyly, who will enquire at the camp in the Creek behind Temple Island, and will then proceed to Cadell Bay and enquire there also and finally proceed to the anchorage between Landfall and East Islands so as to have an hour's daylight there. This arrangement should give about three hours each to Temple Island and Cadell Bay for enquiries. Captain Anderson will proceed in the *Elphinstone* to the East Island anchorage direct, and enquire there.

30th January.—The run to Temple Sound *via* Cleugh Passage is only 18m. Mr. D'Oyly will proceed in the *Elphinstone* to Temple Sound direct and enquire at Paget Island and Mr. Man and Captain Anderson in the *Bess* so as to take the various points of enquiry on the coast west of Cleugh Passage, starting at about 9 A.M. and reaching Temple Sound before dark. The steam gig will be required in Temple Sound.

31st January.—The *Elphinstone* will proceed direct to North Reef Island with Mr. D'Oyly and the *Bess* *via* Casuarina Bay with Mr. Man and Captain Anderson. A start at 7 A.M. should give about four hours at Casuarina Bay for enquiries and an hour's daylight at North Reef Island. Mr. D'Oyly will enquire at North Reef Island. The steam gig will be required.

1st February.—The *Elphinstone* will proceed direct to Kwangtung Harbour so as to arrive in the evening. The *Bess* will proceed *via* Interview Passage making enquiries *en route*. All the Census officers will proceed in the *Bess* so as to arrive at Kwangtung Harbour in the evening.

2nd February.—The *Elphinstone* will proceed to Calcutta, arriving there on the 5th. The *Bess* will start at about 10 A.M. for Elphinstone Harbour *via* Homfray Strait, which will allow about four hours for enquiries in Kwangtung Harbour in the morning and five hours in the evening at Elphinstone Harbour.

3rd February.—The *Bess* should start early for Port Blair *via* the inland passage to Colebrooke Passage so as to arrive in the evening at Port Blair, enquiring *en route* as far as Colebrooke Passage.

TOUR II.

14. The steam launches *Bess* and *Belle* will leave Port Blair on the 11th February 1901.

15. PROGRAMME OF TOUR II.

11th February.	Port Blair to Bumila Creek in Little Andaman.	57m. 8 hrs.
12th "	Port Campbell	69m. 9 hrs.
13th "	Kwangtung Harbour.	24m. 3½ hrs.
14th "	Kyd Island <i>via</i> Middle Strait.	23m. 3 hrs.
15th "	Port Blair.	19m. 3 hrs.

Total for the tour : five days—about 194m., in about 27 hrs. under steam at about seven knots.

16. NOTES AS TO NAVIGATION FOR CENSUS OFFICERS DURING TOUR II.

11th February.—After passing the Cinque Islands, the ground is foul and requires care. Entrance to Bumila Creek is bad.

12th February.—It is best to run up past the Sisters, through Elphinstone Passage in the Labyrinth Islands : a straight easy run and then keep inside the Allen Patches to Port Campbell. The entrance has to be carefully watched, as the points on the old chart (the only one available) do not cut in.

000

13th February.—In going through Middle Strait note that there are several dangerous rocks towards the south end of Kwangtung Harbour, which have to be looked for. There is a bad bar about three-fourths through the Strait itself and the east entrance has a very shallow bar at low tide. There is a camp near the western entrance.

17. WORK TO BE DONE DURING TOUR II.

The following is a sketch of the work to be performed during Tour II.

11th February.—Start at 4 A.M., reach Bumila Creek at noon. This leaves six hours for enquiries there.

12th February.—Start at 6 A.M., reach Fort Campbell at 3 P.M. This leaves three hours' daylight for enquiries.

13th February.—Start at 10 A.M. This gives four hours at Port Campbell in the morning and 4½ hours' daylight at Kwangtung Harbour to verify the information gathered during the first tour.

14th February.—Start at 8 A.M. This will allow of two hours' work at Kwangtung Harbour, three hours in the Strait, and 3½ hours' daylight at Eyd Island.

15th February.—Leave for Port Blair.

APPENDIX B.

REPORTS ON CENSUS TOURS.

First Tour.

Diary of Mr. E. H. Man, C.I.E., Deputy Superintendent, Port Blair, on the first tour round the Andaman Islands on Census duty from 25th January to 2nd February 1901.

With reference to the instructions regarding the Census to be taken of the Andamanese, I have the honour to submit the following report and returns furnishing the result of the two tours which have been made by the Census party:—

25th January 1901.—Having embarked with Mr. D'Oyly, Police escort and Andamanese on board the steam launch *Bess* at 9-30 P.M. yesterday, we left this harbour at 4 A.M. Proceeding northwards we reached Dura-tang (Kyd Island) at 7 A.M. Landed and took note of aborigines living at the Home; found them to number 23, of whom three-fourths were natives of North Andaman. After directing the petty officer of the Home to send to Haddo hospital two women who were found in need of treatment, left at 11 A.M. for Colebrooke Island. The bay on the south coast of that island was reached at 8 P.M. On landing at Par-lon-ta in the centre of the bay one fine large hut and several small lean-to's were found unoccupied, the natives having evidently gone elsewhere some days before our visit. On leaving this place the launch next proceeded to the southern entrance to Colebrooke Passage where she anchored soon after the *Elphinstone*, which had meantime arrived direct from Port Blair bringing the Chief Commissioner and Captain Anderson, I.M.S. In the afternoon all three Census officers (*vis.*, Captain Anderson, Mr. D'Oyly and myself) visited the northern coast of Colebrooke Island through the passage in the steam pinnace in order to ascertain whether any natives were encamped in the vicinity. On landing at Tara-chunga, found that it had been recently occupied by the trepang-collecting file. No other traces of aborigines could be discovered. The natives belonging to this coast, who had accompanied us from Port Blair, informed us that owing to the Jarawas from the vicinity of Fort Campbell having in recent years invaded Baratang, that large island, which comprises the bulk of the territory belonging to the Bojigrah Tribe, has been practically abandoned by our "friendlies."

26th January 1901.—Left in the *Bess* at 6 A.M. for the Archipelago. Arriving off north-west of Havelock Island found Pulu-lun-ta deserted. On proceeding for Tadma Juru found the reef off north extremity of Havelock Island extends farther than is noted on the chart. On arriving near the encampment in Tadma Juru, ascertained that it is called Woma-leptu (not Mail-leptu). It was found to be unoccupied. In rounding the south coast of John Lawrence Island it was found that the reef there has to be given a wide berth. Before entering Kwangtung Strait, the *Bess* was anchored opposite the spot where the *Rusay-mede* and *Brilon* were wrecked in the cyclone of 1944. The site was visited and an anchor and some angle-iron were found imbedded in the mud of a mangrove swamp.

Proceeding at 1-30 P.M. through Kwangtung Strait the whistle was sounded when near the solitary camping-ground (Gereng lebar), but there was no sign of life among the huts. At 3-30 P.M. we reached Outram Harbour where the *Elphinstone* had already arrived. No natives were found by the landing-party, and judging from the information subsequently received it is not improbable that the entire Archipelago was uninhabited at the time of our visit.

27th January 1901.—The *Bess* left with Mr. Bonig at 5 A.M., followed at 6 A.M. by the *Elphinstone* in which all three Census officers travelled to Bacon Bay. Mr. D'Oyly and I went in the *Bess* to take the Census of those visiting the harbour and Stewart Sound and its vicinity while Captain Anderson visited Austin Strait for the same purpose.

At Lautiche (Camp Bay) 43 Andamanese were found with the trepang-collecting file, and we were informed by the petty officer in charge of the latter that about 30 others (about 20 men, 20 women and 10 children) had left a few days before in the direction of Pembroke Bay on the west coast. Although we were assured by the party there that there were no other natives in the vicinity except those already seen by us, we proceeded to near Cadell Point, satisfying ourselves by frequently sounding the steam whistle that there were no signs of life on shore. It was ascertained from those accompanying us that Macpong is not a camping-ground, as hitherto assumed, but is applied to the area north and north-west of Cadell Point to a distance of about three miles. The *Bess* returned to Bacon Bay before dusk. Captain Anderson came across only eight natives during the afternoon.

28th January 1901.—Starting at 5-30 A.M. in the *Bess* proceeded northwards to Lania Bay. Landed and found ten aborigines, most of them in a sickly or diseased condition. They informed us that there were no others nearer than Port Cornwallis. On proceeding northwards we found no signs of life even till after we had anchored off Chatham Island in Port Cornwallis, and then only five Andamanese appeared after repeated whistles had been sounded. These were followed by seven others during the afternoon. As we then learnt that certain parties were in the jungle to the westward, Snowball, one of the most active and intelligent

000

of our party, undertook to go and induce them to meet us at Casuarina Bay on the west coast two or three days later. The *Elphinstone* arrived in the afternoon soon after the *Bess*. The site of Blair's Settlement of 1793-96 on Chatham Island was visited.

29th January 1901.—Left at 5-30 A.M. Visited Turtle Island and Cadell Bay, but found no signs of life. The explanation given by those accompanying us was that at this season the west coast is preferred as affording more shelter. Finding every camping-ground deserted we proceeded northwards for Landfall Island going between Pocock Island and the mainland. While doing this a 2½ fathom shoal was discovered between two lines of much deeper soundings.

In consequence of our stopping over this patch the patent log was cut by a rock and was lost in spite of careful attempts to recover it. At 0-30 P.M. we reached the anchorage between East Island and Landfall Island, the *Elphinstone* having arrived there shortly before us.

30th January 1901.—Left at 5-30 A.M., accompanied by Captain Anderson in place of Mr. D'Oyly. Visited in succession West Island, Whitecliff Island, Thornhill Island and Reef Island without discovering any signs of life. While steaming near the coast opposite the last-named island, two canoes came off containing two men and three women.

Landed at their encampment, which is called Ti-kaw-dung where the entire party was found to consist of three men, three women and three children. Thence proceeded to Paget Island, near which the *Elphinstone* had already anchored. Found that Snowball had brought a number of men, women and children, so that 51 were present at the time of our visit, and 32 others were reported as counted but unable to come in time from the mainland.

31st January 1901.—Left at 6 A.M. in the *Bess* with Captain Anderson and visited Casuarina Bay. Found that the encampment near the north-east corner of the bay had been vacated some time since, and the steam-whistle failed to attract any natives, from which it is certain that there were none at that vicinity at the time. Snowball informed us that owing to a recent death the encampment on the south side of the bay had been abandoned. The *Bess* next steamed to Penbroke Bay, at the southern point of which is situated an encampment known as Ina-tara-jole, where one of the trepang-collecting files is at present employed. Both this station and Camp Bay (Lautiche) are too distant from head-quarters, the excuse given for selecting these sites being the abundance of *Meche-de-mer* obtainable in their vicinity. Directions have been given to select localities within 30 miles of Port Blair. Twenty aborigines were found at Ina-tara-jole and six others were reported as having gone to North Reef Island where they were seen and enumerated by Mr. D'Oyly.

The *Bess* concluded the day's run by going to the anchorage near North Reef Island where the *Elphinstone* had arrived two or three hours earlier.

1st February 1901.—Left at 6 A.M. in the *Bess* with Captain Anderson and Mr. D'Oyly for Kwangtung (or Anson) Harbour. In proceeding through Interview Passage we met four canoes. It was found that most of the natives in them had already been seen and enumerated at Bacon Bay. We landed at the bay near the southern extremity of Interview Island where there is an encampment called Nenge-lun-taw where 19 were enumerated. As time would not permit us to ascertain whether there were any aborigines along the west coast of Middle Andaman, it was decided to postpone the Census of that locality till the second tour. The *Bess* accordingly proceeded direct to Kwangtung Harbour, where the *Elphinstone* had already been anchored some time before our arrival. While she was supplying water to the *Bess* and transferring some police aborigines and a boat for return to Port Blair, a visit was paid to Letersa-lou-ta where 14 aborigines were found and notes taken of those in the neighbouring encampments. The information thus procured was subsequently found to be quite correct, showing how well each individual of the few remaining communities can be recalled by his friends. Two of our Andamanese were left here for the purpose of collecting all south of Austin Strait who had not yet been enumerated, so that they may be included in the Census return of the second tour. Presents were distributed here as at all previous halting-places.

2nd February 1901.—At 6 A.M. the *Elphinstone* left for Calcutta and the *Bess* for Port Blair. In passing out of Homfray Strait the launch ran on to a shallow patch of soft coral. As the tide was fortunately rising, she got off in less than an hour and, without further incident, reached Port Blair at about 2 P.M. This concluded the first tour.

Diary of Captain A. R. S. Anderson, I.M.S., Senior Medical Officer, Port Blair, on the first tour round the Andaman Islands on Census duty from the 23th January to 2nd February 1901.

25th January 1901.—Embarked on the *Elphinstone* at 10-45 A.M., and forthwith proceeded to the anchorage off Colebrooke Island, which we reached about 3 P.M. At once left in steam-cutter with boat in tow, examined Colebrooke Passage and, at the north entrance to the Passage, visited an Andamanese village Tara-chulnga-da which we found had been deserted the previous day. Fresh remains of turtle and pig and fresh ashes were strewn on the ground. Probably some 20 people had been in the hamlet but are said by our Andamanese to have gone to Homfray Strait.

26th January 1901.—In the morning before breakfast, landed and collected on reef to south of Colebrooke Passage but found nothing of particular interest. After breakfast, weighed anchor and proceeded to Outram Island dropping anchor in the bay on the north side of the island at 12-30 P.M. Landed at once in small sandy cove on east side of bay, where I found

the site of an old camp under some magnificent trees. The site of this camp is named Changa-
 lot-yawto. Then visited a village at south end of bay which was also deserted, probably a
 year or so ago. It consisted of five huts, one fairly large capable of accommodating from 10 to
 15 people, the others much smaller. The huts, shaped like Cabul tents, are constructed of a
 framework of cut straight branches of trees, and these are overlaid with cyad fronds. Water
 is obtained from a shallow well, now dried up, in a *sala* running by the side of the village.
 Got a few *Carpophaga ansa* but found them very thin and much wilder than their Nicobarese
 allies. Also collected some lizards, the little known Andaman skink among others.

27th January 1901.—Reached Stewart Sound about 11-30 and at 12-30 started in steam-
 cutter to visit Austin Strait. On the unnamed island opposite Oyster Point, found a small
 encampment of three men, three women and two boys. Of these one child was suffering from
 slightly enlarged spleen, one woman the same, another woman from a white scar on one eye,
 the remains of an old ulcer and one of the men from itch. Of these three women, one had
 given birth to one, now grown up, son, another had two children and the third, now a young
 widow, had one child. They informed me that there is little sickness but that children are
 very seldom born. In proceeding along Austin Strait we found a small deserted village on the
 south side of the Strait immediately east of a narrow creek running southwards and about half-
 way along the Strait. The Andamanese are said to occupy this village in the south-west
 monsoon.

28th January 1901.—Reached Port Cornwallis soon after midday, but although we
 repeatedly sounded our whistle, we saw no signs of Andamanese on the northern shore or the
 southern shore near the entrance. A few, however, put off from the western and southern sides
 of the harbour and were enumerated on the *Bess* which had reached the anchorage before
 us. In the steam-cutter we skirted along the northern shore but found no inhabitants,
 only a deserted village. Mr. Man despatched some of our Andamanese to go across country,
 collecting the inhabitants on the way, and meet us in Casuarina Bay on the west coast on the
 31st.

29th January 1901.—Landed for a couple of hours before breakfast on Chatham Island.
 Found large lumps of bricks held together by mortar lying on the shore, which, from their
 appearance, had evidently formed part of a pier or sea-wall. Embedded under some inches of
 soil, just beyond the beach, was an old flooring of large tiles and, on cutting through the cane
 and low jungle and penetrating inland, the evidences of our former occupation became very
 obvious; bricks and tiles were scattered about in every direction. Ascending a low hill of
 some 60—80 feet the remains of a house were found; the walls, built of sandstone blocks, about
 15" thick, were still standing upright, having formed part of an oblong room about 18' x 20'.
 One of the windows, surmounted by a heavy coping stone, was even visible although the coping
 stone had fallen slightly. Alongside this room was a great heap of stones and bricks evidently
 the materials of a fallen building. The ground slightly below this building appears to have
 been levelled and covered with large red tiles, laid on a bed of coral mortar; but now trees,
 some of them no less than 3 feet in diameter, 4 feet above the soil level, have burst through
 this flooring and are speedily obliterating it. Proceeding north we arrived at the East Island
 anchorage, dropped anchor, sounded our whistle, but although the remains of the village on
 Landfall Island were still visible from the ship, the inhabitants had gone. In the afternoon
 landed and walked to the brackish water *jhil* on the north-east corner of East Island. The *jhil*
 we found almost dry and only one couple of oceanic teal on it. The *jhil* on the south-western
 extremity of the Island was also found by another exploring party to be dry. The Marine
 Survey mark on the beach was in good position and order.

30th January 1901.—Transhipped from *Elphinstone* into *Bess* after dinner last
 night and this morning in company with Mr. Man proceeded at daylight from the East Island
 anchorage westwards through Cleugh Passage. Made for West Island where two years before
 I had met many Andamanese; but although we steered close in shore, sounding the whistle
 frequently, we saw no inhabitants. A similar procedure with regard to Whitecliff and
 Thornhill Islands and the western end of Cleugh Passage produced a like result. Reef Island
 was also found deserted, but on the south-east extremity of Paget Island we found a large
 Andamanese encampment where I found it two years before. The people were enumerated
 and mostly recognised by me from photographs taken two and three years ago. The Andamanese,
 collected by the men despatched on the 28th from Port Cornwallis, were found assembled
 here and duly counted.

31st January 1901.—Left at daylight, went into Casuarina Bay and anchored; landed in
 the dinghy after rowing up the creek flowing into north-east corner of the bay, but found the
 large camp, although the huts were in good order, deserted. Returned to the *Bess*, hoisted
 anchor after breakfasting and sounding the whistle as we went, and proceeded out of the bay
 which seemed quite deserted. With some trouble on account of the reef stretching across the
 entrance, found our way into Pembroke Bay and on the southern side near the entrance found
 some Andamanese helping the trepang file from Port Blair. Having made a Census of the
 people we quitted the bay, and after a rather stormy passage dropped anchor under the shelter of
 North Reef Island where we found Mr. D'Oyly had made the Census of the inhabitants.

1st February 1901.—Started in *Bess* at daylight and proceeded south, steaming between
 Interview Island and the mainland. On the southern extremity of Interview Island landed
 and found an Andamanese camp, the inhabitants of which we enumerated. In this camp I
 found one of the men I had photographed two years before on Paget Island and the people

000 recognised all the others whose photographs I showed them, although they lived so far off as East Island. Proceeded to Port Anson where we found an Andamanese camp near the northern entrance to the port. Landed, counted the people and left some of our Haddo Andamanese ashore, with instructions to collect all the inhabitants of the west coast between Interview Island and Port Anson and those living in Homfray Strait and around Port Anson so that we might enumerate them on our next tour.

2nd February 1901.—Left at daylight, steamed through Homfray Strait, stook for about half an hour on a shoal between North Passage Island and Baratang Island, then proceeded on our way through Colebrooke Passage, after quitting which we had a straight run for Port Blair which was reached about 2 p.m.

Diary of Mr. H. H. D'Oply, Third Assistant Superintendent, on the first tour round the Andaman Islands for Census work, between the 25th January to 3rd February 1901.

25th January 1901.—Left Port Blair at 4 a.m. in the steam launch *Bess* with Mr. E. H. Man, C.I.E., and Mr. Bonig, Assistant Harbour Master, and arrived off Duratang in Kyd Island at 7 a.m. Landed with Mr. Man at the Andamanese Home and obtained all the necessary information, which will be found in the Census forms to be submitted to the Chief Commissioner at the conclusion of the Census. Left Kyd Island at 11 a.m. for Colebrooke Island arriving there and anchoring in the Southern Bay off Par-l'on-ta at 2 p.m. Visited the camp, which had a very fine large hut, but was deserted, though quite recently from all signs. Mention was omitted above of the fact that at the Home on Kyd Island, two women were found suffering from syphilis. They were ordered to be sent at once to the hospital at Haddo. It was remarkable how few children were found there, seven married couples being without any, and of the seven children noted, all but one being nearly grown up. Left Par-l'on-ta and anchored in the mouth of Colebrooke Passage at 3-20 p.m. at the same time as the R. I. M. S. *Elphinstone* which had come direct from Port Blair with Colonel Temple, C.I.E., and Captain Anderson, I.M.S., on board. Mr. Man and myself visited the *Elphinstone* and then proceeded with Captain Anderson in the ship's steam pinnace up Colebrooke Passage to make enquiries at the camps on each side. Both that on Baratang Island named Awropa-Chunga to the south, and that on Colebrooke Island called Tara-Chunga to the north were deserted; but there were signs at the last named of a recent visit by the trepang-collecting party from Port Blair, as shown by the places made for boiling the trepang. Both the *Elphinstone* and *Bess* remained at the anchorage in Colebrooke Passage for the night.

26th January 1901.—Started at 6 a.m. in the *Bess* proceeding first to Pulu-lun-ta on the west coast of Havelock Island. Finding the camp deserted, went on through the Tadma Juru Strait, between Peel and Havelock Islands. The navigation at the west entrance of the Strait requires care. The reef at the northern point of Havelock Island extends much farther than shown on any previous chart. Care has to be taken also in passing out of the Strait to clear the reef which runs out a long way to the south of John Lawrence Island. No signs were discovered of the "Pilot Rock (1844)" marked in the charts. No Andamanese were found at Woma-lepu on the north-east coast of Havelock Island. Anchored in the mouth of Kwangtung Strait off John Lawrence Island, opposite Wreck Point, and went ashore with Mr. Man and Mr. Bonig to see the place where the *Runnymede* and *Briton* were wrecked together in 1844. Found the anchor and pieces of angle iron, no doubt belonging to the *Runnymede*, lying among the roots of some mangroves at the mouth of the creek, where this vessel was cast ashore in the cyclone. Went on through Kwangtung Strait, finding the camp on Henry Lawrence Island, in the middle of the Strait, deserted. Arrived at 5-30 p.m. in the harbour north of Outram Island, where the *Elphinstone* was already anchored, and remained there for the night.

27th January 1901.—Mr. Man and myself went on board the *Elphinstone* and travelled in her from Outram Harbour, which we left at 6 a.m. and arrived at the anchorage in Bacon Bay, Stewart Sound, at 11-30 a.m., where the *Bess*, preceding us, had already arrived. Mr. Man and I went on board the *Bess* and after taking the names of some Andamanese who came off shore in canoes, started to visit the various points in the Harbour. At Lantiche in the north of the Sound was a large camp containing 93 people, including women and children. The scarcity of children was again remarkable, there being only 19. The people were not in good condition, almost all suffering from skin disease, and many from syphilis. One or two cocoanut trees were observed at the camp. It would be a good thing to send out seedlings of cocoanut and plantain trees to be put down at all camps, whenever the parties, for collecting trepang and edible birds' nests, go out. The seedlings, however, should be fairly well grown, otherwise if there is anything edible about the nuts, they would undoubtedly be consumed at once by such thriftless people as the Andamanese. Next we proceeded to the northern entrance to Stewart Sound, where there is a district called Meopong. Stood off and whistled but found no signs of life; and the coast being rocky, we did not land. On the way back through the entrance to the sound went slow, for Mr. Bonig to take soundings and enter them in a private chart. Arrived back in Bacon Bay and anchored close to the *Elphinstone* at about 5-30 p.m.

28th January 1901.—Mr. Man and myself left Bacon Bay in the *Bess* at 5-30 a.m. proceeding inside Sound Island and out through the northern entrance. Anchored in Lamia Bay, opposite to Saddle Peak, and visited a camp there of ten people. Some of them had bad syphilitic sores. The pathway, cut three years ago from this point to the top of Saddle Peak, is not very clearly discernible now, owing to thick undergrowth that has come up since. The

beacon which was then placed on the shore to mark the entrance to the pathway has disappeared. Went on to Port Cornwallis and anchored off Chatham Island at 12-30 p.m. Two canoes came off with eight people, who said there were no more people near the shores of the harbour, the others being away in the jungles of the interior. The *Elphinstone* came to the anchorage about an hour later. We landed on Chatham Island to see the site of the old settlement of 1793-96. The only signs remaining were pieces of brickwork masonry along the shore, showing that the sea must have been encroaching on the land into the foundations of the old houses. I took away, as a memento, some bricks, which were in remarkably good preservation. Mr. Man sent Snowball, one of the Andamanese who accompanied us from Port Blair and who was a native of these parts, to collect the people, in the interior and take them across the North Andaman to Casuarina Bay on the West Coast, ready for the visit of the *Bess* there on the 31st January.

29th January 1901.—Mr. Man and I left at 5-30 a.m. in the *Bess* going inside Turtle Island to cruise behind Temple Island, where there was a camp, which we found deserted. Then proceeded to Cadell Bay, between Tribby Island and the mainland. Found the camp there also deserted. Went on Inside Pocock Island, between that and the mainland losing the launch's patent log, which was caught in a rocky shoal, not marked in the chart. Anchored near this spot to try and recover the log, and for Mr. Bonig to take soundings and locate the shoal, which was found to be a small one lying between two lines of soundings in the chart, with a minimum depth of 3 fathoms. The log was not recovered. Some huts were seen on Pocock Island, but no inhabitants. Proceeded to the anchorage between Landfall and East Islands, where the *Elphinstone* had already arrived and dropped anchor at 12-30 p.m. In the evening I left the *Bess* for the *Elphinstone*, changing places with Captain Anderson.

30th January 1901.—Started at 8 a.m. in the *Elphinstone* and went direct to Temple Sound *via* Clough Passage, reaching the anchorage between Paget and Point Islands at 11-30 a.m., went off with Lieutenant Gray in the steam gig to make enquiries on Paget Island, where a large camp of 74 people were found, though 40 of them were away on the mainland, and 20 on Point Island. Five canoes put off from the mainland to us, bringing Snowball with the people he had collected in the interior, according to Mr. Man's instructions given on the 28th instant at Port Cornwallis. The *Bess* came in and anchored near us at 4 p.m.

31st January 1901.—Started at 8 a.m. in the *Elphinstone* from Temple Sound and went direct to North Reef Island, where we arrived at 11-30 a.m. Landed at Teb Juro village on the east coast and took the Census. There were only 13 people, who had been in the place for a month, and meant to leave directly they had finished a boat that was being built. There is a large fresh water lagoon close to this shore, where three of the ship's officers got 30 couple of teal in the afternoon. The *Bess* with Mr. Man and Captain Anderson on board came in and anchored near us at 4 p.m., having visited Casuarina Bay on the mainland on their way. I went over to the *Bess* in the evening.

1st February 1901.—Left at 6 a.m. in the *Bess* with Mr. Man and Captain Anderson, going along the east coast of Interview Island between that and Boudeville Island, from which two canoes came off with some people, who had already been seen at Bacon Bay. Proceeded round the south point of Interview Island to a camp in a deep bay protected from the south-west by a reef some distance out, with fairly deep water inside. Landed with Mr. Man and Captain Anderson to take the Census. Then went on down the west coast of Middle Andaman to Port Anson at the entrance to Homfray Strait, where we anchored near the *Elphinstone*, which had arrived before us. Visited a village near the entrance to the harbour. The *Bess* took in a fresh supply of water from the *Elphinstone* and also took over from her two settlement boats, with their convict crews and the police guard.

2nd February 1901.—Started at 5-30 a.m. with Mr. Man and Captain Anderson in the *Bess* taking in tow the two settlement boats, previously carried by the *Elphinstone*; and went through Homfray Strait, obtaining all information about the population *en route*. While passing through Elphinstone Harbour between Homfray Strait and Colebrooke Passage, the *Bess* went aground on a shoal, which was not marked on the private chart of this route, that was being used by Mr. Bonig. No apparent damage was done to the launch, the shoal being luckily of sand and soft coral. It was nearly an hour before we got free. Then we went through Colebrooke Passage and direct to Port Blair, where we arrived at 2 p.m.

Diary of Lieutenant N. F. J. Wilson, Commanding R. I. M. S. "Elphinstone" on a tour round the Andaman Islands on Census duty from 26th January to 2nd February 1901.

26th January 1901.—The second trip with the Census party commenced. The members were as before, but owing to the many small bays and narrow channels to be visited a steam launch accompanied the *Elphinstone*. The usual routine was for the launch *Bess* to steam up the coast, whilst the ship went direct by sea to the day's destination.

Leaving Port Blair at 11 a.m. we anchored in Colebrooke Passage anchorage at 3 p.m. The *Bess* had already arrived. This snug little harbour has been well described by Commander Simpson and there is nothing to add to his remarks. Entering in the afternoon we found that the two reefs at the entrance were difficult to make out. The Census party went up the passage towed by the ship's steam cutter, but were unsuccessful, the only huts seen being deserted. The reef, at the entrance, however, was a grand hunting ground for marine specimens and the Andamanese did great execution there amongst the fish.

000
 26th January 1901.—The *Bess* left at daylight to explore between the islands, whilst the *Elphinstone* proceeded at 10 a.m. for Outram Harbour direct, a two hours' run at easy speed. Nothing was found at Outram and the *Bess* arriving at 3-30 p.m. told the same tale. The natives were conspicuous by their absence. Remained in Outram Bay till following morning.

27th January 1901.—Both ship and launch left early for Stewart Sound and arrived about noon anchoring in Bacon Bay. Some natives were found at last! Captain Anderson went up Austin Strait in the ship's steam cutter, but very few people were found. Mr. Man searched the harbour and surroundings in the *Bess*. On the whole the Census was a failure here, there being hardly any one to count, but it was interesting to visit this fine harbour. Lay here all night.

28th January 1901.—A notable day this, for the *Elphinstone* nearly came to grief again on an unknown patch. We left Bacon Bay at 8 a.m. and proceeded up the Sound and steamed out through the northern entrance passing between the rocks known as A. and B. patches. After leaving these known dangers behind us and whilst steering to sea to obtain an offing before steering up the coast, we ran over a shoal patch which lies 2½ miles N. 57° E. of Oliver Island. We passed over 6 fathoms, but as the colour of the water showed that there were shoaler bits, the ship turned round and steamed towards the shoal. At 14 feet it was time to stop and fix the position of the patch. This is a dangerous shoal lying right in the northern channel into Stewart Sound. Strange it had not been found before. Proceeded up the coast and at noon arrived at Cornwallis Harbour. This fine harbour did not produce many natives either; they were all said to be on the west coast. We lay here all night in spite of the evil reputation of the place and no one seemed any the worse for it.

29th January 1901.—At 8 a.m. left Cornwallis Harbour, the *Bess* preceding us by a couple of hours; she visited Cadell Bay and the coast and the *Elphinstone* taking the passage outside the Table Islands and inside Union Sledge, met her off Pocock Island. There the *Bess* was at anchor on another shoal patch not shown on the chart. This lies between Pocock Island and the mainland and has 2 fathoms on it, but nothing is likely to use this narrow gut, except a launch or small boat now and then. We anchored in the channel between East and Landfall Islands and found it a very snug little anchorage for all but south-east winds. A splendid north-east monsoon blew here, making the weather cool and pleasant. An expedition to a lagoon on the north-east end of East Island only produced one oceanic teal, as the lagoon was almost dry. The Andamanese, however, managed to get a lot of fish and a big lizard, which was ugly enough to put most of us off. These natives are excellent men for such expeditions. They are smart and keen and work well. Pulling ashore and then walking about 5 miles in a hot sun and then pulling back, did not seem to damp their ardour in the slightest; on board, too, they are much cleaner and give less trouble to the ship than other natives.

30th January 1901.—Left at 8 a.m. for Temple Sound *via* Clough Passage and the channel between West Cliff and Reef Island. The ground is all recently surveyed, which makes this passage much easier and safer than hitherto, but it is not a channel to use, except in fine weather. The *Bess* left earlier, searching the coast and bays. Arrived at Temple Sound at noon, the *Bess* anchoring a little later. A few natives were here and the Census people were also able to get particulars of others in the jungle. A shooting party got five couple of oceanic teal on Point Island, off a very small lagoon on the north coast of this island.

31st January 1901.—The *Elphinstone* left at 8, the *Bess*, as usual, earlier, searching the coast line. We steamed down inside Snark Island and as at this point the survey ceases, the speed was reduced and course and soundings were carefully laid down on a track chart for future use. Anchored off Reef Island about noon, close into the shore; the soundings on the Marine chart are totally misleading, as we could find no anchorage in less than 17 fathoms until close to the beach, whereas the chart shows 7 and 8 some way out. Census operations were not very successful as usual. But the shooting party came across a long lagoon on Reef Island, with any amount of oceanic teal on it; snipe were seen too, and there are quantities of the Nicobar pigeon here. Twenty-eight couple of teal were shot and were found excellent for the table. This lagoon runs nearly the whole length of Reef Island about 100 yards from the eastern shore; it is very narrow and surrounded by thick jungle, and the birds flew up and down the strip of water offering very pretty shooting.

1st February 1901.—Left Reef Island in company with the *Bess* at 6 a.m. The latter took the passage between Interview Island, whilst the ship, going slowly as before, passed between Reef and Interview Island. This is a fine and broad channel and the marine chart is again at fault. The *Elphinstone* passed quite near the north coast of Interview Island although an extensive reef is shown as existing here. The track followed is shown on accompanying chart. After getting out of this channel steered to the southward for Port Anson where the ship anchored at noon; the *Bess* came in later, and as we part company here, we gave her fresh water and our native passengers.

2nd February 1901.—At daylight the *Bess* and her satellites moved off for Homfray Straits, whilst the *Elphinstone* took her departure for Calcutta, arriving there on the 4th February.

Diary of Mr. Bony, Assistant Harbour Master, on the first tour round the Andaman Islands on Census duty from the 23th January to 2nd February 1901.

25th January 1901.—Left Port Blair at 4 a.m. with E. H. Man, Esq., C.I.E., and party in the steam launch *Bess*; arrived Kyd Island at 7 a.m. Messrs. Man and D'Oyly went

ashore and took Census. Left Kyd Island 11 a.m. for Colebrooke Passage. Anchored in the Bay to the south of Colebrooke Island, off the encampment Par-l'on-ta. Went ashore with Mr. Man and party; no Andamanese were seen here. Returned on board and steamed to the anchorage in Colebrooke Passage arriving there at 3-20 p.m. The R. I. M. S. *Elphinstone* arrived at the same time direct from Port Blair. Went aboard the *Elphinstone* and accompanied Mr. Man and party in the *Elphinstone* cutter through Colebrooke Passage. 800

26th January 1901.—Left Colebrooke Passage anchorage at 5-40 a.m. for the Archipelago, arriving off Pulu-lun-ta at 7-45 a.m. No Andamanese were seen here. After this steamed through Tadmra Juru. I observed that the reef to the north of Havelock Island when entering Tadmra Juru from the west extends considerably further to the north than it is marked on the chart; the channel is well over to Sir William Peel Island. Returned through Kwangtung Strait and anchored at 11 a.m. off the coast where the *Briton* and *Rungmede* were wrecked. Only one anchor and the remains of a few iron knees were seen. Returned on board and proceeded for Outram Harbour. There is a reef opposite Gareng-lebor, which is not marked on the chart. The channel is to the north of the reef close to the shore off Henry Lawrence. I arrived at Outram Harbour at 3-30 p.m. Went ashore on the east side of the Bay; saw a number of coconuts, part of a Burmese canoe and some wreckage strewn about on the beach. Remained at Outram Harbour for the night.

27th January 1901.—Proceeded at 5-10 a.m. to Stewart Sound. Messrs. Man and D'Oyly travelling in the *Elphinstone*. Arrived at Bacon Bay at 10-30 a.m. The *Elphinstone* arriving about an hour later Messrs. Man and D'Oyly came on board the *Bess*. We proceeded to Camp Bay where Census was taken. After this proceeded through the northern entrance of Stewart Sound to Eileen Bay; no Andamanese were seen, a number of soundings were taken which are recorded in the accompanying chart of Stewart Sound. I also note that the rocks off Cadell Point are not noted in G. T. S. Maps, but are shown in Commander Bacon's chart. Returned to Bacon Bay in the evening and anchored for the night.

28th January 1901.—Started for Lamia Bay 5-30 a.m. and steamed through the northern entrance of Stewart Sound. Commander Wilson advised me that the safest passage in leaving Stewart Sound was between the rocks A. and B.; this passage was accordingly taken, not less than 5 fathoms of water was obtained between the rocks. Anchored at Lamia Bay at 8-40 a.m. and accompanied Messrs. Man and D'Oyly ashore who took the Census of the Andamanese that were seen here. Returned on board and left at 11 a.m. for Port Cornwallis. Anchored off Chatham Island at 12-30 a.m. Went ashore with Messrs. Man and D'Oyly to see the remains of the old settlement; only a few blocks of bricks were seen strewn about on the beach. Returned on board and anchored at 3-30 near the *Elphinstone* which had in the meantime arrived from Bacon Bay.

29th January 1901.—Left Port Cornwallis at 5-50 a.m. and steamed *via* Temple Island anchorage and Cadell Bay to East Island. No Andamanese were seen *en route*. On steaming between the mainland and Pocock Island, the patent log carried away when running over a shoal, where on one place only 12 feet of water was found. This shoal is not marked on the chart. Anchored on the shoal and searched for the log, but it could not be found. When sounding round the shoal 10 fathoms was found on either side of it. The position of it seems to be between two lines of the soundings marked on the chart. Proceeded to East Island and anchored at 12-50 p.m. Went ashore at Landfall Island. Noticed here an Andamanese encampment, also some very good task logs, one of them over 60 feet long.

30th January 1901.—Left East Island, anchored at 5-30 a.m., and passed by Whitecliff and Thornhill Islands through Temple Sound to Paget Island. Anchored off Oldham rock and went ashore with Mr. Man and party on Paget Island, where a number of Andamanese were seen. Returned on board and anchored at Paget Island anchorage for the night at 4 p.m.

31st January 1901.—Left Paget Island at 6 a.m. for Casuarina Bay. Anchored at 8 a.m. Mr. Man and party went ashore and after they returned proceeded to Pembroke Bay. The coast of Pembroke Bay is very dangerous. Several shoals were seen some miles off shore. There is also a reef nearly all across the Bay. The channel is to the south of the latter. Anchored in Pembroke Bay at 1-30 p.m. Mr. Man and party went ashore to take Census and on their returning we proceeded to North Reef Island where we anchored at 5 p.m. for the night.

1st February 1901.—Left North Reef Island at 6 a.m. and proceeded through Interview Passage for Port Anson. Met some Andamanese off Bonnet Island and proceeded after Census had been taken to the extreme south of Interview Island and anchored inside the coral reef which forms a sheltered cove; here Mr. Man and party went ashore to take Census, and after they returned we proceeded to Port Anson. Took the *Bess* alongside the *Elphinstone* and took 400 gallons of water, while some convicts, Andamanese, and police were transferred from the *Elphinstone* to the *Bess*. Took also two boats over. Anchored here at 4 p.m. for the night.

2nd February 1901.—Left Port Anson at 6 a.m. for Port Blair *via* Homfray Strait and Colebrooke Passage. The *Bess* struck on a reef in Elphinstone Harbour. This reef is not marked on Commander Simpson's chart of Homfray Strait and Colebrooke Passage which was used at the time. As the compass used on the *Bess* is not adjusted, I could not take the correct bearings of the reef, but am forwarding a chart herewith on which it is marked approximately. The reef seems to be marked on Commander Bacon's chart of Elphinstone Harbour. The Andamanese informed me that there are two reefs here, one just south of

000

Homfray Strait (which I was aware of) and the other about half-way through Elphinstone Harbour on which the *Bess* struck. They also told me that there is a deep channel between the two and running close along the shore, for which they thought I was steering. No apparent damage was done to the *Bess*, and after she got off we proceeded through Colebrooke Passage to Port Blair, arriving at the latter place at 2 P.M.

Second Tour.

Diary of Mr. E. H. Man, C.I.E., Deputy Superintendent, Port Blair, on the second tour round the Andaman Islands on Census duty from 15th to 18th February 1901.

15th February 1901.—Left this harbour on the second tour at 6-30 A.M. in the *Bess* accompanied by Captain Anderson, Mr. D'Oyly and a party of Andamanese. The steam launch *Belle* with Mr. Bonig and some more Andamanese (including 11 Onges who had lately arrived) accompanied us and led the way. Proceeding northwards we arrived at Duratung at 9-30. Finding all well there, and having ascertained that none were there who had not been already enumerated, proceeded through Middle Strait to Kwangtung Harbour, where 31 aborigines were assembled at Lekera-lon-ta. It was found that 21 of these had already been entered in the returns of the first tour. Fifteen coconut seedlings were planted and some fowls left for breeding purposes. Presents were then distributed and photographs taken.

16th February 1901.—Six aborigines who arrived after sunset yesterday were brought to the *Bess* at daybreak and particulars regarding them were noted. After this the *Bess* and *Belle* left for Port Campbell, where we arrived at about 10 A.M. The whistle was sounded several times with no apparent result, and we were about to leave when some Andamanese were seen to emerge from the jungle near the sea on the south side of the harbour. They were at once pronounced to be Jarawas by our Andamanese. Seeing us turn back and stop, they gesticulated and appeared to court an interview, so we decided to approach them in our boat. Accompanied by Captain Anderson, Mr. D'Oyly and some Andamanese, including one woman, and taking cushions and boards to serve as shields in case of hostilities, we proceeded shorewards. Meantime the women and children of the Jarawa party, numbering about five, were seen to hurry away along the sandy beach to the eastward, while the men remained behind. Three of the latter boldly came forward on to the foreshore to meet us and they were observed to have their bows and arrows in their hands ready for immediate use. On our approaching to within about 80 yards of them, they assumed a threatening attitude and shouted apparently in defiance and this in spite of their hearing the shrill cries of the Andamanese woman in our boat, whose presence being thus announced it was hoped they would be persuaded of our peaceful intentions. We then ceased pulling and carefully watched their actions. The leader of the three, who was then about 60 yards distant, was next seen to raise his bow, and he was evidently about to discharge his arrow at us—which would have been the signal for the other two men to do the same—when Captain Anderson, most opportunely, fired at him with his .303 rifle, with the result that the leader was wounded in his right thigh. The effect produced by our single shot so surprised the three men that no arrow was discharged at us by any of them. The wounded man, who was seen to bleed profusely, at once ran towards the beach, but fell after going about 20 yards. The other two men ran to his assistance and carried him to the jungle, while the remaining men of the party shouted to the women and children to return, which they did. It would have been easy to shoot any of the men during this interval and without any risk to our party, but we refrained from doing so, although there was strong ground to suspect that these were the men concerned in the recent unprovoked murder of a petty officer of the garjan-oil collecting file near Anikhet. In spite of our forbearance, we felt convinced that, as the wounded man would probably soon bleed to death, the effect already produced would suffice to deter the Jarawas from again defying and assaulting us as they had just done. After waiting near the spot for some time we returned to the *Bess* and the two launches then left for Port Mount, where we arrived at 4-30 P.M. We there procured an old canoe for presentation to our Onge friends, they having met with an accident to their canoe in coming to Port Blair a few days before. The Mount Augusta Home was visited during the evening, and some coconuts obtained for distribution among the Onges.

17th February 1901.—Both launches left at 5-30 A.M. and proceeded through the Labyrinth Islands to the anchorage at Cinque Island, where we arrived at 10 A.M. We there took on board eight Onge women and two boys who had been left there by our Onge companions when proceeding to Port Blair. Taking all the Onges on board the *Bess*, the *Belle* was left at anchor, and we proceeded for Little Andaman arriving off Bumila Creek at 3 P.M. We took on shore 35 coconut seedlings for planting and a number of fowls for breeding, and the Onges landed in the canoe with a variety of presents which they had brought with them. The seedlings were planted in a suitable spot and the 21 Onges we had brought were then given an opportunity of witnessing the performances of Captain Anderson's rifle, which duly impressed them. We were disappointed to find that there were no other Onges in the vicinity of Bumila Creek at the time of our visit. At 5 P.M. we returned to the *Bess*, and after a somewhat rough passage we reached the anchorage at Cinque Island at 8-30 P.M.

18th February 1901.—At 8 A.M. Captain Anderson, accompanied by Mr. D'Oyly, visited Cinque Island in order to make some geological observations and obtain some specimens. On their return at 8-30 both launches left for Port Blair where they arrived at about 11-30 A.M.

From the accompanying returns it will be seen that we can with confidence estimate the present population of Great Andaman (exclusive of the Jarawas) at no higher figure than 800, of whom only 80% are children, while the Onges and Jarawas together are believed not to exceed, 1,000, viz. :—

Onges (Little Andaman)	800
Jarawas (South and Middle Andaman)	250
Do. (Butland Island)	100
Do. (North Sentinel)	180

Diary of Captain A. R. S. Anderson, I.M.S., Senior Medical Officer, Port Blair, on the second tour round the Andaman Islands on Census duty from the 13th to 15th February 1901.

15th February 1901.—Embarked on the *Bess*, left Port Blair about 6-30 A.M., accompanied by the *Belle* and, after a smooth passage, reached Kyd Island soon after 9-30. Having communicated with the inhabitants—Andamanese and convicts—and landed a few fowls for breeding purposes, we departed for Middle Straits, through which we passed, with occasional rain squalls and anchored for the night close to and inside the northern entrance of Port Anson. We landed and made a Census of the people, who had been collected from the surrounding country by Andamanese left here for this purpose on our former trip. Here, as in all the other places visited, the great paucity of children was very noticeable. Only one of the women had two children, the others possessing either one each or none. The commonest story they tell is that their first or first and second children are dead and that the one with them is the sole survivor. The great child mortality is undoubtedly due to the very extensive prevalence of syphilis which displays itself in some of its most virulent forms among these people. The infantile mortality is certainly not due to maternal neglect, as the mothers display great affection for their children.

We landed some cocks and hens, strictly enjoining the people not to eat but to feed them and allow them to breed and to this they readily assented. We also distributed some sprouting cocoonets which seemed much appreciated.

16th February 1901.—Left Port Anson at 6 A.M., and at 10 entered Port Campbell; made the circuit of the harbour, sounded the whistle several times, but failed to evoke any response from the inhabitants until we were actually departing. Then the people on the *Belle* discovered some Andamanese on the western shore, close to the entrance of the harbour. About eight women with a few children and some eight men were seen slowly wending their way along the sand towards the southern part of the bay. We again whistled to attract their attention and slowly stood in towards the shore, at about three cables from which we came to an anchor. No sooner had we done so than the men began wading out from the shore towards us, using threatening gestures with their bows and arrows, while the women and children, with their camp gear slung in baskets on their backs, made off at a quicker pace along the upper part of the beach. Seeing their inability to reach us, the men slowly retreated after the women leaving three of their number behind to act as a rear guard. As we were anxious to see these people at close quarters, to accurately count them, and if possible to establish friendly relations, we put off in our boat to the shore. In the boat were Messrs. Man and D'Oyly and myself, a convict at the tiller and a crew of some seven Andamanese together with an Andamanese woman, whose shrill cries we hoped might prove to the savages ashore our pacific intent. The crew as usual took their bows and arrows with them, but carefully kept them concealed in the bottom of the boat; and, as our Andamanese assured us very positively that their compatriots ashore were bent on mischief, Mr. D'Oyly took a Mauser pistol and I a .303 rifle. As we approached the shore in token of amity we waved our umbrellas, our handkerchiefs, and large pieces of red cloth intended as presents and much appreciated by other Andamanese. We also instructed our Andamanese woman to shout friendly messages: shout she did, and the messages were doubtless—although unintelligible to me—friendly. When we were still about one hundred yards from the water's edge and had only just sufficient water to float our boat, while inshore of us stretched a coral shoal with a foot or less of water on it, the three rear-guard Andamanese came leaping down the shore and, after trying their bows to see that they were in good order, with loud shouts rushed into the water to the attack of our boat. I went forward, stood in the bows of the boat and waved the cloth presents vigorously and got the woman to again shout. In vain; they totally ignored our friendly overtures. The three warriors formed into line abreast, an interval of about 15 yards separating the one from the other, and ran towards us splashing through the water which reached half-way up to their knees. The man attacking the bows of the boat, who was the ring-leader and directing the operations of the other two making the flank attack, had his arrow already on the bow-string and was in the act of firing, being now well within bow-shot 60–80 yards, when after motioning him to stop and his disregarding my order, I fired at and struck him in the right thigh. He spun round and made off for the beach, followed by the other two. After running a short way up the shore, he was joined by his comrades and while one carried him on his back into the bush, the other ran off along the shore yelling to the rest of the party who were now hastening forward to the attack. As our retreat was out of the question and we had not the slightest desire to renew such an unequal contest I fired a shot into the sand a few feet in front of the party to warn them that they were well within range. This so greatly surprised and alarmed them that they at once rushed into the forest and we saw them no more. After waiting about ten minutes longer and again trying in vain to

000 establish friendly relations by means of the woman's cries we put off to the *Bess*, hove up anchor and stood out of the harbour.

I greatly regret that the necessity for shooting this man should have arisen and that it should have devolved upon me to do it; but from our Andamanese we learnt that the damaged man undoubtedly belonged to the same raiding party that, between two and three weeks before, murdered one of our convict petty officers while out in the forest looking after the garja-oil collectors. They also told us they had frequently encountered him before, recognised him by his large moustache and that he was an absolutely implacably hostile villain. As our boat was, at the time of the attack, lying in shallow water, bows to the shore, and the crew had to stand on the thwarts to fend her off the coral knobs and were thereby terribly exposed, a speedy retreat, as well as being very impolitic, was impracticable. Two alternatives then remained, to allow the savages to fire into our crowded boat with the certainty of hitting some one, or forestalling them by shooting one of their number. Our Andamanese were certainly physically not the equals of the Jarawas, so that we could hardly rely on their shooting as well as their opponents and repelling the attack with their bows and arrows, hampered as they were for want of room and the necessity of looking after the boat. Moreover, we had ordered them not to display or even touch their weapons to provoke an attack and they had behaved with exemplary self-control in strictly obeying their orders, relying implicitly on the protection of the weapons in our hands. Had the three men fired simultaneously, as was their evident intent, into our midst, the arrows, coming from such different directions, must have hit some of us and a disaster would almost certainly have ensued. I need hardly say that the Andamanese in our boat desired the total extermination of their life-long enemies, the Jarawas, while those in the *Belle* were most indignant and aggrieved at not being permitted to land to share in the fight.

After leaving Port Campbell we steered south and at 4-30 dropped our anchor off the Mount Augusta Home in Port Mout where we spent the night. One of the women in the home was overjoyed at hearing that a Jarawa had been injured, as they had ousted her tribe from their possessions in Port Campbell. The knowledge now imparted to the Jarawas that rifles can injure as well as make a noise, may save the lives of any mariners who chance to be shipwrecked on these coasts.

17th February 1901.—Left Port Mout at dawn, 5-30, towing a large Andamanese canoe, a present for the Onges. To the south of Rutland Island the wind freshened considerably, the canoe upset and we were a good deal delayed by collecting the scattered oars, seats and steersmen and finally hoisting the canoe up to our rail. After anchoring the *Belle* between the Cinque Islands, taking Mr. Bonig and the Onges aboard, we left at 10 A.M. for Little Andaman, picking eight Onge women and two boys off South Cinque Island where they had been awaiting the return of their husbands from Port Blair. We reached Bumila Creek at 3 P.M., landed the Onges, planted some coconuts, explained and exhibited the effects of rifle fire to the people, saw their dances, gave them presents and left them happy and contented at 5 P.M. Bumila Creek we found well deserved its name, as crowds of flies settled on our boat and accompanied us back to the *Bess*. Several of the Onge women had large scars on their backs, many 6—8 inches in length, some women having four to eight such scars. These are said to be caused by cuts inflicted by their irate husbands to mark their displeasure at conjugal infidelity, which, to judge by the large proportion of scarred women, is not uncommon. After a very rough passage rendered difficult by the darkness of the night and the absence of a good compass, we anchored off Cinque Island at 8-30.

18th February 1901.—Landed on south Cinque Island to collect specimens of the bare rocks which form such a marked feature of parts of Rutland and the Cinque Islands, returned to the *Bess* at 8-30, hove up anchor, left for Port Blair, and reached there 11-30 A.M.

Diary of Mr. E. H. D'Oyley, Third Assistant Superintendent, Port Blair, on the second tour round the Andaman Islands on Census duty from the 15th to the 18th February 1901.

15th February 1901.—Left Port Blair with Mr. E. H. Man, C.I.E., and Captain A. R. S. Anderson, I.M.S., in the steam launch *Bess* at 6 A.M., following close behind the steam launch *Belle* which was navigated by Mr. Bonig, Assistant Harbour Master, going north *via* Kyd Island. As the weather was bad for two or three days previously until last night, it was decided to reverse the original programme drawn up by the Chief Commissioner, so as to give time for the sea to calm down before attempting the passage to the Little Andaman. We stopped for half an hour at Kyd Island to question the people at the Andamanese Home there, where we went before in the first tour, and to leave some coconuts to be planted; then proceeded through Middle Strait to Kwangtung Harbour. No people were found on the way. At the village in the mouth of the Harbour, there were 51 people, counting women and children, collected according to directions given by Mr. Man, in the first tour, from the surrounding country. Details are given in the Census forms, to be submitted to the Chief Commissioner, at the end of the operations. Remained in this Harbour for the night.

16th February 1901.—Left Kwangtung Harbour at 6 A.M., the *Bess* following the *Belle*, and ran down the west coast of South Andaman to Port Campbell. In entering the port we blew the steam whistle several times before seeing any people on shore. At length when we had turned to run out of the port, about a dozen Andamanese including some women were seen walking fast along the shore from the mouth of the Harbour towards the interior. Our

Andamanese on board at once said that those on shore were of the Jarawa Tribe. As they spoke, some of the men on shore waded out in the sea towards us making threatening gestures with their bows and arrows, but seeing that the steam launches were too far off, quarter mile from the shore, they rejoined their party and proceeded along the sands. Mr. Man decided that we should go ashore in a boat manned by our Andamanese, taking one of their wives with presents to attempt a conciliation with the Jarawas. As a precaution, Captain Anderson took a rifle and I took a Mauser magazine pistol. We rowed in, not showing any arms, and stood up in the boat waving handkerchiefs and red cloth, and making the women call out to show that we did not mean hostility. It was soon apparent that the Jarawas meant fighting, for they took their women away some distance behind a rocky point, while three of the men armed with bows and arrows returned and with threatening cries and gestures waded out towards us, through the intervening shallow water, our boat being only just clear of the ground. These three Jarawas advanced quickly, straight towards us, without any hesitation, but taking care to keep an interval of about 15 yards between each, and to place themselves so that the centre man could take the boat, while the others could shoot into each side of it. We still did not show our arms, but persevered in making friendly signs until they were about 30 yards off, when Captain Anderson knelt down and, resting his rifle on the bow of the boat, drew a bead on the man who was evidently directing their party. As their leader was in the act of raising his bow with the cord drawn back to shoot, he was brought up literally with a round turn by a .303 bullet from Captain Anderson's rifle through his thigh. His two companions turned at the same time and ran away, but seeing the wounded man fall after he had run about 20 yards, they stopped to help him and pluckily carried him ashore into the jungle, where he probably died shortly, judging from the gush of blood which crimsoned the water all round him the moment he was hit. It would have been easy to kill the three, but we did not like to fire at them running away, especially when the wounded man was being helped along by the others. When one of them, however, came out of the jungle again and shouted to the rest of their party for help, the reinforcement was put a stop to by another shot from Captain Anderson, aimed so as to hit the ground two or three feet in front of the shouter. This made him disappear at once and also his friends, when they saw the spot where the bullet had ploughed through the sand. We judged it best to return to the steam launch then, and both the *Bess* and *Belle* left Port Campbell for Port Mout, where we arrived about 4-30 P.M. We visited the Andamanese Home at Balughat and remained at this anchorage for the night.

17th February 1901.—The *Belle* and *Bess* left Port Mout at 3-30 A.M. and going through the Labyrinth Islands arrived at the Cinque Islands anchorage at about noon. Leaving the *Belle* there, and taking Mr. Bonig on board the *Bess* we proceeded to Little Andaman, arriving in Bumila Creek at 3-30 P.M. Went ashore but found no one, though there were fresh foot-prints in the sand and a fire still alight. Landed several Onge men and women of this country some of whom had visited Port Blair, and some who had been picked up on the Cinque Islands. Planted out some coconut seedlings on the shore of the creek and gave presents to the Onge people. Started off at 5 P.M. and had a rough passage to the Cinque Island anchorage, not arriving there till 9 P.M.

18th February 1901.—Captain Anderson and myself landed on the big Cinque Island, to examine the geological formation, which is quite unlike that of the rest of the Andamans, and is undoubtedly volcanic. The *Bess* and *Belle* left at 8 A.M. for Port Blair, having a fairly rough passage, and arrived at noon.

Diary of Mr. Bonig, Assistant Harbour Master, on the second tour round the Andaman Islands on Census duty from the 15th to 18th February 1901.

15th February 1901.—Left Port Blair on second tour at 6-30 A.M. in the *Belle* followed by the *Bess*, with Mr. Man and party for Kyd Island, arriving there at 9-30 A.M. Proceeded through Middle Straits to Port Anson where we anchored for the night at 4 P.M.

16th February 1901.—Left Port Anson at daybreak for Port Campbell where some Jarawas were seen. Mr. Man and party went in the boat towards them, but returned without landing. Proceeded to Port Mout where we anchored for the night at 4-30 P.M.

17th February 1901.—Left Port Mout at 5-15 A.M. and proceeded *via* the Labyrinth Islands and the south of Rutland to the anchorage between the Cinque Islands. Anchored the *Belle* here and left her in charge of the serang while I proceeded on board the *Bess* *via* South Cinque Island, where some Onge women were taken on board, to the Little Andaman, arriving off Bumila Creek at 3 P.M. Mr. Man and party went ashore with the Onges. Left Bumila Creek at 5 P.M. and returned to Cinque Island at 8-30 P.M. Anchored for the night.

18th February 1901.—Left Cinque Island at 7 A.M. and returned to Port Blair at 11-30 A.M.

On the first tour the *Bess* was under steam about 80 hours, under banked fires 122 hours. She steamed 376 miles, consuming 11 tons of coal and 1,000 gallons of water for the boiler.

On the second tour the *Bess* was under steam about 87 hours, under banked fires 76 hours. She steamed 235 miles, consuming 6 tons of coal and 600 gallons of water for the boiler.

The *Belle* was under steam about 27 hours, under banked fires 56 hours. She steamed 200 miles, consuming 5 tons of coal and 750 gallons of water for the boiler.

About 2 gallons of water per man per day was used for drinking purposes.

APPENDIX C.

CENSUS OF INDIA, 1901.—FIRST TOTALS.

ANDAMAN AND NICOBAR ISLANDS.

Chief Commissioner.—LIEUTENANT-COLONEL R. C. TEMPLE, C.I.E.

Census year.	POPULATION.			VARIATION SINCE PRECEDING CENSUS (+) or (-).	
	Males.	Females.	Total.	Number.	Per cent.
1901	13,581	5,918	24,499	+ 8,093	+ 56.95
1891	13,375	2,234	15,609	+ 981	+ 6.71

The increase in the population is due to the inclusion of the aborigines of the islands, now enumerated for the first time under the admirable arrangements made by Colonel Temple. The results of this Census, which was conducted by special parties of the Andaman officials at some risk to themselves, are shown in the tables below, the Andamanese being classified by the recognised tribes, and the Nicobarese by the dialects spoken on different islands or groups of islands. The number of children among the Andamanese and the Southern Nicobarese is probably understated. The Census operations have brought to light a new tribe, the Tabó of North Andaman, and have proved the recently discovered Kórá Tribe to be comparatively numerous. The Census officers were set upon at Port Campbell by the implacably hostile Jarawas of South Andaman, and only saved themselves by firing on their assailants, one Jarawa being killed. In explanation of the small numbers of the newly discovered Tabó Tribe, the Census party were informed that when a contagious disease was recently introduced among the Tabós by the Chárá or Kórá Tribes of the coast they proceeded to kill off all those attacked until very few of the tribe were left.

ANDAMANESE.

NICOBARESE.

Name of Tribe.	ADULTS.		CHILDREN.		TOTAL.		DIALECT.	ADULTS.		CHILDREN.		TOTAL.
	Male.	Female.	Male.	Female.				Male.	Female.	Male.	Female.	
	No.	No.	No.	No.				No.	No.	No.	No.	
Chárá	16	13	6	2	39		Car Nicobar	1,136	999	704	682	3,511
Kórá	31	33	14	19	96	Lately dis- covered.	Chowra	172	178	100	72	522
Tabó	18	16	7	10	49	Hitherto unknown.	Teressa	308	190	174	130	702
Yere	96	80	36	14	213		Central	409	396	182	136	1,063
Kede	24	30	3	2	59		Southern	81	73	18	30	192
Jówai	31	19	7	1	48		Shom Pen	168	140	24	16	348
Kól	6	3	3	...	11			2,164	1,978	1,172	996	6,310
Bojigýáb	31	14	2	3	50		Foreign traders	301	...	...	...	301
Ealawa	8	10	3	1	19		TOTAL	2,865	1,978	1,172	996	6,311
Bia	14	16	8	4	37							
Jarawa	280	210	88	40	585							
Ongs	303	273	63	33	673							
TOTAL	841	717	192	129	1,863							

NOTE.—The dialects of Car Nicobar and Chowra are spoken on those islands only; that of Teressa on Teressa and Rompoka; the Central dialect on Camorta, Trinkat, Nanowory and Katchall; the Southern dialect on Palm Mills, Little Nicobar, Grand and Great Nicobar (Coast); the Shom Pen in the interior of Great Nicobar.

NOTE.—The dialects of Car Nicobar and Chowra are spoken on those islands only; that of Teressa on Teressa and Nompoka; the Central Dialect on Camorta, Trinkat, Nancowry and Katchall; the Southern Dialect on Pula Mills, Little Nicobar, Cordal and Great Nicobar (Coast); the Shom Pen in the interior of Great Nicobar.

APPENDIX D.

List of places visited by the Census Party.

English Name.	Andamanese Name.
Kyd Island.	Dara-táng.
Colebrooke Island S. Bay.	Par-l'on-tá.
" " N. Coast.	Tára-chánga.
Havelock Island.	Pánga-lár-mágu-trema.
" " on N. W. Coast of	Pulu-luntá.
" " Strait between Sir W. Peel and	Tadma Járu.
John Lawrence Island.	Parkit-trema.
Kwangtung Strait.	Gereng-láar.
Outram Harbour.	Tár-mágu.
Bacon Bay.	Tára-chiro.
Stewart Sound.	Miriti-rá-pang.
Austin Strait.	Pórong-chiro.
Camp Bay.	Láu-tiche.
Cadell Point (W. Bay).	Chaka-mit-koito.
" " (N. Bay).	Tá-berongo.
Lámia Bay, S. extremity of	Rengo-to-tá.
Port Cornwallis.	Tolou-tong.
" " Chatham Island.	Tébi-chiro.
Turtle Island.	Koto-par.
Cadell Bay.	Tébi-chiroh.
Landfall Island.	Tau-rá-mika.
West Island.	Karung-méo.
Whitecliff Island.	Tar-boro.
Thornhill Island.	Há-pang.
Reef Island.	Ti-kó-dang.
" " N. E. Encampment.	Taumo-tát.
Paget " " N. E. Encampment.	Kárate-tát-chiro.
Casuarina Bay.	Tórop-tot-chéto.
" " N. E. Encampment.	Tébi-chiro.
North Reef Island.	Ina-ta-rá-jólo.
Pembroke Bay W. Coast.	Renge-l'un-tó.
Interview Island S. Encampment.	Karang-to-ng-tá-chira. Lékerá-l'on-tá.
Kwangtung Harbour.	Kuro-pang.
Fort Campbell.	Tára-chang.
" " Mount, " Home " st.	Gereng-lá-acháti-jára.
Cinque Island.	Jertis.
Little Andaman.	Wilima-tára.

Statement of the detailed population of the Andaman Islands.

NAME OF TRIBE.	ADULTS.		CHILDREN.		TOTAL.
	Male.	Female.	Male.	Female.	
Báa seen	14	12	3	3	37
" not seen	...	4	...	1	
Balawa seen	3	7	1	1	19
" not seen	3	3	...	...	
Bojigyal seen	17	6	3	...	50
" not seen	14	8	...	3	
Jawai seen	13	14	3	...	48
" not seen	8	5	4	1	
Kál seen	3	...	...	...	11
" not seen	4	2	3	...	
Kede seen	21	21	3	2	59
" not seen	3	9	...	...	
Yéro seen	76	57	21	8	218
" not seen	22	23	5	6	
Tábo seen	2	...	...	...	48
" not seen—estimated	13	16	7	10	
Kúrá seen	21	20	8	15	96
" not seen	10	12	6	4	
Chárlár seen	16	15	6	3	39
" not seen	...	...	...	...	
Onge estimated	303	273	53	33	672
Jarawa estimated	280	210	55	40	585
TOTAL	844	717	192	129	1,882

APPENDIX

Tabular Statement showing the present numbers

[illegible]

DIX E.

in each tribe as ascertained by the Census.

[illegible]

APPENDIX F.

Table of Census Results by Tribes.

Serial No.	Tribe.	ADULTS.		CHILDREN.		TOTAL.	AT FORT BLAIR AND DURANGO HOMES.					GRAND TOTAL.									
		M.	F.	M.	F.		TOTAL.	Tribe.	ADULTS.		CHILDREN.		TOTAL.								
									M.	F.	M.	F.									
{	Bla . .	2	3	2	1	7	{	Fort Blair	11	10	—	2	23	Bla . .	14	13	3	3	33		
	" . .	—	4	—	1	5	{	Durangang	1	—	1	—	2	" . .	—	4	—	1	5		
{	Balawa .	1	3	—	—	4	{	Fort Blair.	2	3	1	1	6	Balawa .	3	7	1	1	12		
	" . .	3	3	3	—	7	{	Durangang	—	—	—	—	—	" . .	3	3	3	—	7		
{	Bojigrah .	9	6	3	—	17	{	Fort Blair.	6	—	—	—	6	Bojigrah .	17	6	3	—	26		
	" . .	14	9	—	3	26	{	Durangang	—	—	—	—	—	" . .	14	9	—	3	26		
{	Jawal .	7	9	3	—	19	{	Fort Blair	6	3	—	—	11	Jawal .	13	14	3	—	30		
	" . .	3	3	4	1	22	{	Durangang	—	—	—	—	—	" . .	3	3	4	1	11		
{	Kai . .	—	—	—	—	—	{	Fort Blair	3	—	—	—	3	Kai . .	3	—	—	—	3		
	" . .	4	3	3	—	9	{	Durangang .	—	—	—	—	—	" . .	4	3	3	—	9		
{	Kala . .	10	11	2	2	25	{	Fort Blair.	11	9	—	—	20	Kala . .	21	21	3	2	47		
	" . .	3	9	—	—	12	{	Durangang	—	1	1	—	2	" . .	3	9	—	—	12		
{	Yee . .	33	43	14	6	112	{	Fort Blair	19	9	4	4	26	Yee . .	76	57	21	9	163		
	" . .	23	23	6	9	59	{	Durangang	6	3	3	—	14	" . .	23	23	6	9	59		
{	Tabb . .	—	—	—	—	—	{	Fort Blair	1	—	—	—	1	Tabb . .	—	—	—	—	—		
	" . .	—	—	—	—	—	{	Durangang	1	—	—	—	1	" . .	—	—	—	—	—		
{	Kari . .	20	20	5	14	59	{	Fort Blair.	1	—	—	—	1	Kari . .	21	20	5	15	61		
	" . .	10	12	6	4	32	{	Durangang	—	—	—	1	1	" . .	10	12	6	4	32		
{	Chiriar .	7	3	3	1	14	{	Fort Blair	9	9	3	—	20	Chiriar .	16	15	6	3	40		
	" . .	—	—	—	—	—	{	Durangang	—	1	1	1	3	" . .	—	—	—	—	—		
TOTAL	{	109	96	34	23	262	{	Fort Blair	69	47	7	7	120	{	183	182	47	31	443		
		63	66	20	15	104		{	Durangang .	6	7	6	2		20	{	63	66	20	15	104
		171	164	54	37	466			{		77	54	13		9		153	{	246	218	67

Notes: Figures refer to the numbers in each tribe not seen by the Census officers on account of their being at distant encampments, positive information regarding the numbers being furnished by those best acquainted with the facts.

APPENDIX G.

Tribal Distribution and Place Names, Andaman Islands.

103
619

1	2	3	4	5	6
No. on map.	Name of island, locality or encampment.	Andamanese name.	Tribal Territory.	Where situated.	REMARKS.
	East Island	Tā-khā	Chākrā	The following islands off the north and north-west coast of North Andaman, viz. — East Island, Landfall Island, West Island, Thornhill Island, Whitecliff Island, Reef Island, Paget Island, Paget Island (encampment on)	The Coco Islands are known to this tribe by the name Dik-irachān.
	Landfall Island	Tāh-chirā	"		
	Clogh Passage	Lān-chirā	"		
	West Island	Tā-rā-mā	"		
	Thornhill Island	Tā-rā-mā	"		
	Whitecliff Island	Kā-rā-mā	"		
	Reef Island	Bā-pang	"		
	Paget Island	Tā-mā-lā	"		
1	Paget Island (encampment on)	Kā-rā-bōrāng	"		
	Point Island	Mā-rā-bā	"		
	Sugar-loaf Island	Chā-dō	"		
	Temple Sound	Tā-rā-lā-chirā	"		
	Cape Price	Pā-rā-jā	Kōrā	From bay opposite Craggy Island (East Coast of North Andaman) to Cape Price and thence along the North and West Coast to the North side of Camarina Bay, together with all the islands off the Coast except Craggy Island and those constituting the territory of the Chākrā tribe.	
	Foreck Island	Kā-rā-mā	"		
	Cadell Bay	Kō-rā-mā	"		
	Kinsler Island	Tā-rā-mā	"		
	Port Cornwallis	Tā-rā-mā	"		
1	Do. (East Island at mouth of)	Po-chūmbō (also Bo-pang)	"		
	Chatham Island (Port Cornwallis)	Tāh-chirā	"		
1	Trilby Island	Chā-dō-pang	"		
1	Encampment on N. E. of N. Andaman near Reef Island	Tā-hā-bung	"		
1	Island encampment between Port Cornwallis and Temple Sound	Bā-poll	"		
	Craggy Island	Rōh	"		The interior is occupied by the Tāhō tribe.
	Camarina Bay	Kā-rā-tā-chirā	Yā-rā	E. Coast. From shore opposite Craggy Island to North Andaman Stream situated between Cooke Point and Kinsler Point in Middle Andaman, together with the islands of the Coast including Craggy Island.	
1	Shark (P. Shark) Island	Chirā-mā	"		
	Camarina Bay (encampment on N. side of)	Tā-rā-tā-chirā	"		
	South extremity of Lamlia Bay	Rāngā-to-tā	"		
	Point between Yalik and Lamlia Bay	Ko-no	"		
	Do. North of Tā-rā-lā	Yalik	"		
	Ellison Bay	Pā-rā	"		
1	Cadell Point, North of Do. (Territory within a radius of five miles of)	Tā-burāng	"		
	Do. Point (Bay W. of)	Mā-pang	"		
1	Camp Bay	Chā-rā-mā-lā	"		
1	Wreck Point	Lān-tā	"		
	Dot Island	Chā-rā	"		
	Kwangtung Island	Arāto	"		
	Pembroke Bay	Kā-rā-tā	"		
1	Encampment at S. W. of Pembroke Bay	Tā-hā-chirā	"		
	Lakroche Island	Isā-tā-rā-jā	"		
1	N. Reef Island	Ar-hā	"		
	Saddle Peak	Tāh-chirā	"		
1	Do. (Adjacent hill on N. side of)	Pā-rā-mā	"		
	Stewart Island	Jirā-mā	"		
	Sound Island	Mirritā-pang	"		
	Anson Strait	Tāh-chirā	"		
1	Do. (encampment at E. end of)	Pā-rā-chirā	"		
	Brown Point	Tā-chā	"		
	Bacon Bay	Thomata	"		
1	Arre Island (also Berkeley group)	Tāh-chirā	"		
1	Camarina Bay (encampment on S. side of)	Tāhā	"		
		Chā-bā-lā-rā-chirā	"		

Tribal Distribution and Place Names, Andaman Islands—contd.

1	2	3	4	5	6
No. on map.	Name of island, locality or campsite.	Andamanese name.	Tribal Territory.	Where situated.	REMARKS.
1	Interview Island . . .	Tai-tan-mi-ka, also Ti-tan-mi-ka, or in Bha dialect, Tai-tan-mi-ka . . .	Kada . . .	E. Coast. From southern border of the Yaro territory (Middle Andaman) to Kasei I'ar-tat. (Middle Andaman.)	
	See Serpent Island . . .	Tara-belo . . .	" . . .		
	Do. (Island adjacent to) . . .	Tale-bucho . . .	" . . .		
	Boudville Island . . .	Jara-boroin . . .	" . . .		
	Bennett Island . . .	Chai-ai-long . . .	" . . .	W. Coast. From Maru-mi-ka-beli (North Andaman) to stream opposite N. E. point of Flat Island (Middle Andaman) with all islands from Interview to Flat Island inclusive (as shown on map).	
	Anderson Island . . .	Toro-tar-cho . . .	" . . .		
	South Reef Island . . .	Ti-pu-ta . . .	" . . .		
	Campsite on South Extremity of Interview Island opposite Reef Island . . .	Ranga-i-un-to . . .	" . . .		
	Taft Island . . .	Burai . . .	" . . .		
	Hump Island . . .	Lawa . . .	" . . .		
	Flat Island . . .	Tala-chia . . .	" . . .		
	Island between Middle Andaman and Long Island . . .	Pai-lob . . .	Ka . . .	E. Coast. From Kasei I'ar-tat to Hornfray Strait with intervening islands (as shown in chart).	
1	Long Island . . .	Mai-tang . . .	" . . .		
	Do. (Campsite on) . . .	Iga-tang-ta . . .	" . . .		
1	Campsite in Yot jig . . .	Burka-chung . . .	" . . .		
	Do. . .	Pili-otaga . . .	" . . .		
	Gutter Island . . .	Tali-tali . . .	" . . .		
	Kwagtung Harbour (Campsite on N. side of Hornfray Strait) . . .	Mai-kua . . .	Boji-yab . . .	N. side of Hornfray Strait with Baratang and the islands bordering the East and West Coasts of that island. [Jarawas have in recent years occupied the interior of Baratang at intervals.]	
1	Campsite on N. side of Hornfray Strait . . .	Tali-chi-ai . . .	" . . .		
	Site of ancient kitchen-midden near N. E. point of Baratang opposite North Passage Island . . .	Wai-e-emi . . .	" . . .		
	Large island between Hornfray Strait and Middle Strait . . .	Bimang . . .	" . . .		
	North Passage Island . . .	Tob-trema . . .	" . . .		
	Colebrooke Island . . .	Pick-i'ka-chika . . .	" . . .		
1	Do. (Campsite near N. W. point of) . . .	Thru-chinga . . .	" . . .		
1	Do. (Campsite in S. Bay of) . . .	Pai-i-un-ta . . .	" . . .		
	Do. Passage (Campsite near S. end of) . . .	Oupa-chinga . . .	" . . .		
	South Island . . .	Oerang kaika . . .	" . . .		
	Diligent Strait . . .	Boro-jara . . .	" . . .		
	Hornfray Strait . . .	Chai-jara . . .	" . . .		
	Andaman (or Middle) Strait . . .	Godam-jara . . .	" . . .		
1	Barren Island . . .	Tali-chaga . . .	" . . .		
	Barcodan . . .	Chito-i-g-tang . . .	" . . .		
	Danana (or Entry) Island . . .	Kaichawa . . .	Bha . . .	The whole of South Andaman and Rutland Island except where occupied by Jarawas (vide map) also the Labyrinth Island, Spike Island and S. W. corner of Middle Andaman, as shown in map.	
1	Islet at mouth of Lura-jig inlet . . .	Chai-tot-kaika . . .	" . . .		
	Kwagtung Harbour . . .	Kang-tang-ta-chia . . .	" . . .		
1	Do. (Campsite near W. mouth of) . . .	Lahut-i-un-ta . . .	" . . .		
	Kyd Island . . .	Dura-tang . . .	" . . .		
	Fort Campbell . . .	Kuro-pung . . .	" . . .		
	Do. Mount . . .	Oerang'au-aid-ti-jara . . .	" . . .		
	Rutland Island . . .	Toto-pai (Bha) Golu-w-Kee-Onga . . .	" . . .		
	North Button Island . . .	Chaga-i-or-jing . . .	Balawa . . .	The Archipelago and the three Button Islands.	
	Middle Button . . .	Kaika-wa . . .	" . . .		
	South Button . . .	Agai-ot-banai . . .	" . . .		
	Outram Island . . .	Ti-maga . . .	" . . .		
	Henry Lawrence Island . . .	Chaka-trema . . .	" . . .		
	John Lawrence Island . . .	Parkit-trema . . .	" . . .		
	East (or Logis) Island . . .	Jila-trema . . .	" . . .		
	Wilson Island . . .	Boro-trema . . .	" . . .		
	Nicholson Island . . .	Kaichawa-trema . . .	" . . .		

Tribal Distribution and Place Names, Andaman Islands—concl.

103
619

1	2	3	4	5	6
No. on map.	Name of island, locality or encampment.	Andaman name.	Tribal Territory.	Where situated.	REMARKS.
	Havelock Island . .	Pulaga-l'-a-m-gu- -brom	Bakwa .		
	Sir W. Peel Island .	Ta-brom .	" .		
	Nall Island . .	Ta-jira .	" .		
	Sir Hugh Rose Island .	Kichom-bur .	" .		
	North Sentinel . .	Pitang .	Jikawa .		North Sentinel and the interior of the northern half of South Andaman and Blasting and Rutland Island, as shown in map.
	Little Andaman . .	Willam-tan (Bla) Gwibe-l'ong (Ong)	Ong .		Little Andaman and the islands between that island and Rutland, also South Sentinel.
	Bonin Creek (north of Little Andaman) .	Kawia-cyaho (Ong)	"		
	South Brother . .	Gwacha-od'we (Ong)	"		
	North Brother . .	Ta-ta-l' (Ong)	"		
	Water Island (small)	Edgi-l'-ar-ain (Bla)	"		
	Do. (large)	Ta-joma-da (Ong) Fala-chang (Bla) Ga-t'-kwa (Ong)	"		
	Passage Island . .	Ale-t'-ching (Bla) Ongwa (Ong)	"		
	Chaque Island (North)	Jar-ta (Bla) Gwa- la (Ong)	"		
	Do. (South)	Jar-ta (Bla) Ga-ta- kwa (Ong)	"		
	South Sentinel . .	Yahi-l'g bang (Bla) Indag-go-gue (Ong)	"		

CHAPTER II.

DESCRIPTIVE.

- I. GEOGRAPHY.—Position and General Description of the Andaman Islands—The Submarine Range between the Pegu Yomas and Sumatra—The Submarine Contours—The Great and Little Andaman—The Harbour—The Hills—The Scenery—Surveys.
- II. METEOROLOGY.—Commercial Value of the Meteorology—Climate—Cyclonic Storms—Rainfall—Weather—General Statistics—Tides.
- III. GEOLOGY.—General Geology—The Subsidence of the Islands—Earthquakes—The Conchology—Marine Fauna—Economic Zoology—The Forests—The Timber and its Economic Uses—The Imported Flora—General Character of the Forests.
- IV. HISTORY.—Ancient Notices of the Islands—Origin of the name—Medieval and Modern Notices of the Islands—Modern History of the Islands and people.

I. GEOGRAPHY.

131

Position and General Description of the Andaman Islands.—The Andaman Islands, large and small, are said to number 204 and lie in the Bay of Bengal, 590 geographical miles from the Hooghly mouth, 120 miles from Cape Negrais in Burma, the nearest point from the mainland, and about 340 from the north extremity of Sumatra. Between the Andamans and Cape Negrais intervene two small groups, Preparis and Cocos; between the Andamans and Sumatra intervene the Nicobar Islands, all indicating a submarine range connected with the Aracan Yoma Range of Burma, stretching in a curve, to which the meridian forms a tangent, between Cape Negrais and Sumatra; and though this curved line measures 700 miles, the widest sea space is about 91 miles. The extreme length of the Andaman Group is 219 miles, with an extreme width of 32 miles.

The principal outlying islands are the North Sentinel, a dangerous island of about 28 square miles, lying about 18 miles off the west coast of the South Andaman; the remarkable marine volcano, Barren Island, 1,158 feet, quiescent for the last hundred years, 71 miles to the North-East of Port Blair; and the equally curious isolated mountain, the extinct volcano known as Narcondam, rising 2,330 feet out of the sea, 71 miles east of the North Andaman.

The land area of the Andaman Islands is taken as 2,508 square miles.

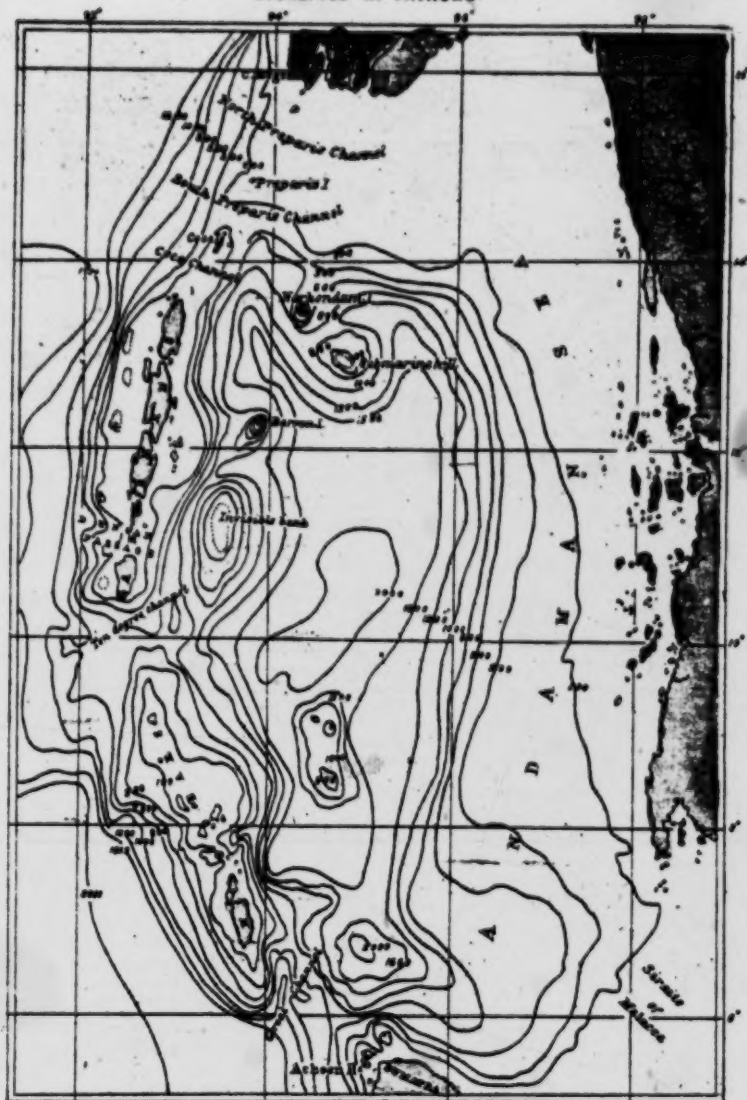
To the west of the Andamans, distant about 18 miles, are the dangerous Western Banks and Dalrymple Bank, rising to within a few fathoms of the surface of the sea and forming, with the two Sentinel Islands, the tops of a line of submarine hills parallel to the Andamans: to the east, some 40 miles distant, is the Invisible Bank with one rock just awash, and 34 miles south-east of Narcondam is a submarine hill rising to 377 fathoms below the surface of the sea. Narcondam, Barren Island, and the Invisible Bank, a great danger of these seas, are in a line almost parallel to the Andamans inclining somewhat towards them.

133

The Submarine Range between the Pegu Yomas and Sumatra.—Certain physiological facts have long been held, in combination with phenomena exhibited by the fauna and flora of the respective terminal countries, to point to the former existence of a continuous range of mountains, thought to be sub-aerial, from Cape Negrais in Burma on the north to Achin Head in Sumatra on the south. According to the doubtful authority of Wilford, Hindu legends notice this remarkable range, ascribing it to Rama, who attempted here first to

CONTOURS OF THE ANDAMAN SEA SOUNDINGS IN FATHOMS

133



[facing p. 35]

133 bridge the sea, an enterprise afterwards transferred to the south of India, and accomplished by the god at the more practicable point we call Adam's Bridge.

According also to Portman, the tradition of the South Andaman, or Bojigugiji, group of tribes is that Maia Tomola, the ancestral chief of the nation from which they all sprung, dispersed them after a cataclysm, which caused a subsidence of parts of a great island, divided it up into the present Andaman Islands, and drowned large numbers of the old inhabitants together with many large and fierce beasts that have since disappeared. As a matter of physical geography such a subsidence need not have been more than of 20 fathoms or 120 feet to convert one single island into the present Andaman group. Portman also notes, as tending to show the junction of the Andaman Islands with the mainland, that besides the South Andaman tradition, the people of the Little Andaman have names for animals that do not now exist and they cannot describe.

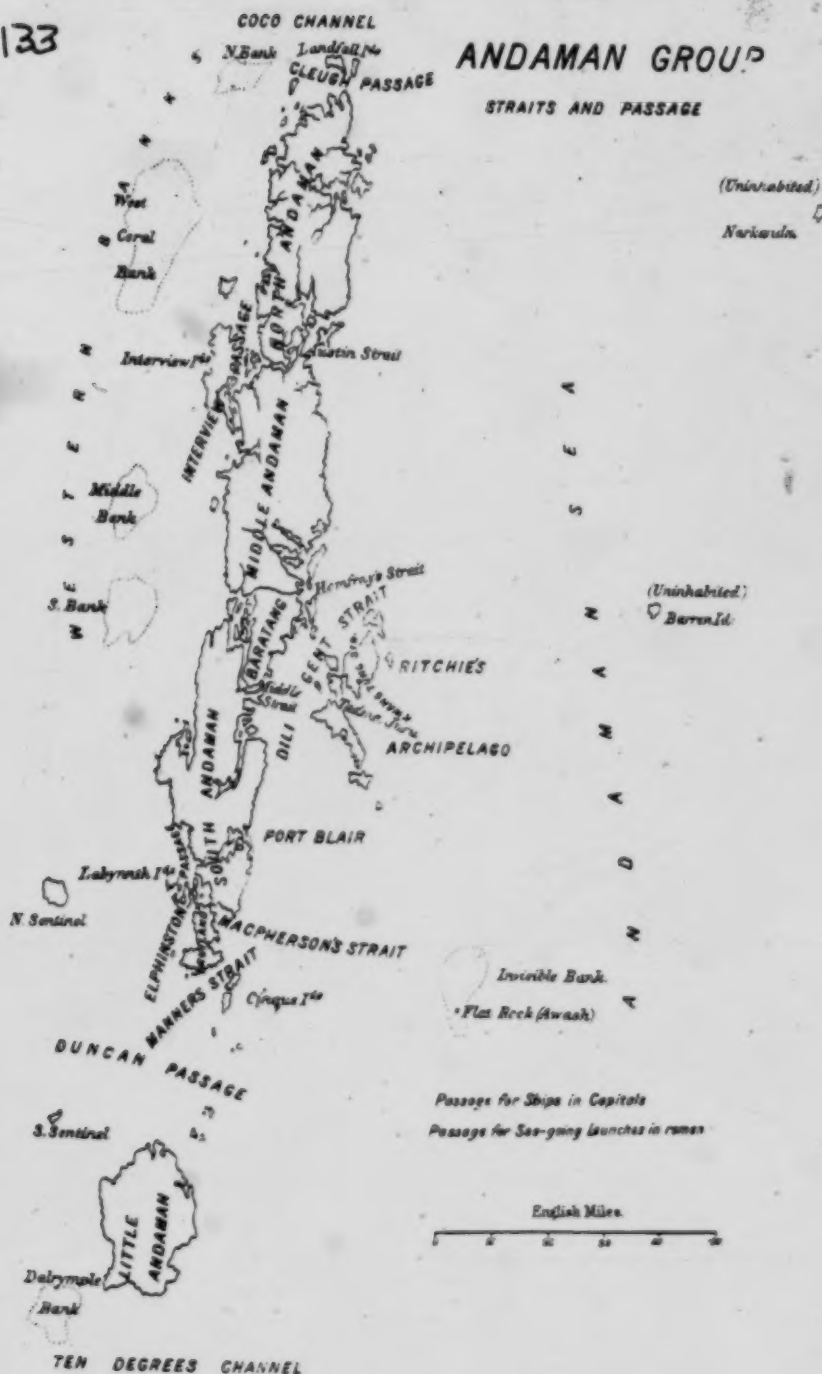
The acceptable evidence on this subject that I have been able to gather goes to show, on the assumption that, except in the case of isolated volcanic peaks, 200 fathoms is the extreme limit of the rising and sinking of land on the earth's surface, that it is possible that there was a time when the whole Andaman group with Preparis and the Cocos formed one continuous hill connected with Cape Negrais, and that this hill was separated by a sea of, say, 400 fathoms deep from the Nicobars considered as one island and the general Nicobar Island again by a sea of, say, 600 fathoms deep from Sumatra.

The Submarine Contours.—The accepted conclusive argument proving the isolation of the Andaman Sea from the connected oceans is that of Carpenter, who showed that the temperature of its great depths involved the existence all round it of submarine hills, the greatest depth of which below sea level could not be more than 750 fathoms. I have been at some trouble to draw contours of the depths of this sea from such data as the charts at my disposal afford and it seems to me that they fully support Carpenter's conclusion. The openings into the Andaman Sea from the connected oceans are:—from Bay of Bengal, the North and South Preparis Channels, the Coco Channel, Duncan Passage, Ten Degrees Channel, and the Great Channel:—from the Gulf of Siam, the Straits of Malacca. This last has a bar only a few fathoms deep and clearly isolates the Andaman Sea from the Gulf. The greatest depths in the other Channels are as under: North Preparis Channel, 47 fathoms; South Preparis Channel, 150 fathoms; Coco Channel, 86 fathoms; Duncan Passage, 17 fathoms; Ten Degrees Channel, 565 fathoms; Great Channel, 798 fathoms.

On either side the line of the Andamans and Nicobars the sea rapidly deepens to 1,000 fathoms and thence on the west in the Bay of Bengal to over 2,000 fathoms within 60 miles of the Nicobars and probably within 100 miles of the Andamans; and on the east in the Andaman Sea to 2,000 fathoms within 83 miles of the Nicobars and within about 95 miles of the Andamans. The contours thus show beyond doubt the existence of a lofty range of submarine mountains between Cape Negrais and Acheen Head rising from the ocean depths up to 15,000 feet and nowhere less than 6,000 feet on the east, and up to 15,000 feet and nowhere less than 10,000 feet on the west, thus separating the Bay of Bengal from the Andaman Sea. Of this great Range 700 miles long, taking 100 fathoms as a base, the continental and island summits are shown in one central line north to south as (1) Cape Negrais (Arakan Yomas) and Preparis Islands, (2) Cocos and Andaman Islands, (3) Nicobar Islands, (4) Acheen Head (Sumatra). The Western Banks, the Sentinel Islands and Dalrymple Bank are lower summits to the west of the central line. According to my contours outlying summits of detached spurs of the central line to the east are Barren Island and the Invisible Bank. They also show that Narcondam and the submarine hill to its south-east are separated from the Central Andaman and Nicobar Range, being summits of outlying spurs of the Yomas attached to Cape Negrais. This last fact supports the old assumption that the dormant Barren Island volcano belongs to the *immediate* Sunda group of volcanoes, while the long extinct Narcondam Volcano belongs to the Pegu group, both belonging to the *general* Sunda group.

As the arguments derivable from the submarine contours have not so far as I know been hitherto worked out, and as they may be thus of some general interest, I attach a map of the contours and some detailed notes thereon. It must be remembered that much of the ethnographic, as well as the natural history,

133



[facing p. 36]

133

speculation about both the Andamans and Nicobars depends on the assumed degree of their isolation from the Asiatic Continent.

Notes on the Ocean Contours.—(1) A narrow ridge runs between Great Nicobar and Acheen Head from ten to two miles wide with just less than 800 fathoms as the lowest depth of water on it.

(2) The Andaman Sea has been sounded to 2,000 fathoms about 84 miles east of Car Nicobar and the Bay of Bengal to well over 2,000 fathoms 61 miles east of Teressa. In the Andaman Sea the deep water of 2,000 fathoms or more does not run probably further north than 125 miles east of Port Blair. In the Bay of Bengal the deep water of 300 fathoms is probably distant about 100 miles west of the Andamans.

(3) Probably the deepest water between the Invisible Bank and the Andamans is under 900 fathoms, the Bank itself being the summit of a long hill running some 90 miles north-north-east to south-south-west directly on to Car Nicobar, the deepest point between it and Car Nicobar being some 900 fathoms.

(4) Probably the deepest water between Barren Island and the Andamans is under 1,000 fathoms, the island being the peak of a hill running some 85 miles north-east to south-west direct on to Rutland Island. The deepest point between it and the Invisible Bank is under 1,100 fathoms.

(5) At 94 miles due east of Stewart Sound is a patch of 377 fathoms, the summit of a submarine hill running apparently west to east some 45 miles. Between this hill and south-west to Barren Island and west to the Andamans are great depths probably over 1,500 fathoms. Between it eastwards to the Tenasserim Coast the depth is probably something over 1,200 fathoms. Between it and Narcondam 84 miles to south-west the depth is under 1,000 fathoms.

(6) Narcondam lies due south of Negrais Island and the 400 fathom contour runs round it and the coasts of the Andamans and Burma. The water between it and the Andamans, 71 miles to west, is deep, probably up to at least 1,200 fathoms. Between it and Barren Island, 74 miles to south-west, the depth is great, probably over 1,500 fathoms. Between it and the hill above mentioned to south-east the depth is under 1,000 fathoms. Between it and Negrais Island the deepest water is 411 fathoms in a hole to north-west, otherwise the depth here is not more than 362 fathoms.

(7) The 100 fathom line runs round all the Andamans, the Cocos and all the Western Banks, the two Sentinels and Dalrymple Bank. It runs also right round the Nicobars.

The Great and Little Andaman.—The main part of the Andaman group is a band of five chief islands, so closely adjoining and overlapping each other, that they have long been known as one, viz., "the Great Andaman." The axis of this band, almost a meridian line, is 156 statute miles long. The five islands are (north to south)—North Andaman, 51 miles long; Middle Andaman, 59 miles; South Andaman 49 miles; Baratang, running parallel to the east of the South Andaman for 17 miles from the Middle Andaman; and Rutland Island, 11 miles long. Four narrow straits part these islands—Austin Strait between North and Middle Andaman; Homfray's Strait between Middle Andaman and Baratang and the north extremity of South Andaman; Middle (or Andaman) Strait between Baratang and South Andaman; Macpherson's Strait between South Andaman and Rutland Island. Of these only the last is navigable by ocean-going vessels. Attached to the chief islands are, on the extreme north, Landfall Islands, separated by the navigable Cleugh Passage; Interview Island, separated by the very narrow but navigable Interview Passage, off the west coast of the Middle Andaman; the Labyrinth Islands off the south-west coast of the South Andaman, through which is the safe navigable Elphinstone Passage; Ritchie's (or the Andaman) Archipelago off the east coast of the South Andaman and Baratang, separated by the wide and safe Diligent Strait and intersected by Kwangtung Strait and the Tadma Juru (Strait). Little Andaman, roughly 26 miles by 16, forms the southern extremity of the whole group, and lies 31 miles south of Rutland Island across Duncan Passage, in which lie the Cinque and other islands, forming Manners Strait, the main commercial highway between the Andamans and the Madras Coast.

Besides these are a great number of islets lying off the shores of the main islands.

133



[facing p. 37]

133

The Harbours.—The coasts of the Andamans are deeply indented, giving existence to a number of safe harbours and tidal creeks, which are often surrounded by mangrove swamps. The chief harbours, some of which are very capacious, are, starting northwards from Port Blair, the great harbour of South Andaman—*East Coast*, Port Meadows, Colebrooke Passage, Elphinstone Harbour (Homfray's Strait), Stewart Sound, Port Cornwallis, the last three are very large;—*West Coast*, Temple Sound, Interview Passage, Port Anson or Kwangtung Harbour (large), Port Campbell (large), Port Mount, Macpherson's Strait. There are besides many other safe anchorages about the coasts for sea-going vessels: notably Shoal Bay and Kotara Anchorage in the South Andaman, Cadell Bay and the Turtle Islands in the North Andaman, and Outram Harbour and Kwangtung Strait in the Archipelago.

The Hills.—The islands forming Great Andaman consist of a mass of hills enclosing very narrow valleys, the whole covered by an exceedingly dense tropical jungle. The hills rise, especially on the east coast, to a considerable elevation; the chief heights being, in the North Andaman, Saddle Peak, 2,400 feet; in the Middle Andaman, Mount Diavolo behind Cuthbert Bay, 1,678 feet; in the South Andaman, Koib, 1,505 feet, and Mount Harriet, 1,193 feet, the Cholunga range, 1,063 feet; in Rutland Island, Ford's Peak, 1,422 feet. Little Andaman, with the exception of the extreme north, is practically flat. There are no rivers and few perennial streams in the islands.

The Scenery.—The scenery of the islands is everywhere strikingly beautiful and varied, and the coral beds of the more secluded bays in its harbours are conspicuous for their exquisite assortment of colour. The scenery of the harbours has been compared to that of Killarney by Professor V. Ball, and no doubt they do recall the English Lakes. One view of Port Blair Harbour is strongly reminiscent of Derwentwater as seen from the Keswick end.

Surveys.—The whole of the Andamans and the outlying islands were completely surveyed topographically by the Indian Survey Department under Colonel J. R. Hobday in 1883—6 and a number of maps on the scale of two miles to the inch were produced, which give an accurate coast line everywhere and astonishingly correct contours of the inland hills, considering the difficulties presented by the denseness of the forests with which they are covered. For Port Blair and neighbourhood a series of maps on the scale of four inches to the mile were made. The exact latitude and longitude of Chatham Island in Port Blair Harbour were determined astronomically by Mr. Nicholson of the Great Trigonometrical Survey in 1861: latitude $11^{\circ} 41' 13''$ N.; longitude $92^{\circ} 42' 44''$ E. The marine surveys of the Andamans date back many years and one can go back to the days of Ritchie (1771) and of Blair and Moorsom (1788—96) for partial charts which are still usable. Brooker's surveys of 1867 added much knowledge about Port Blair, but the serious dangers of the western coral banks were not removed by surveys till 1888-9 under Commander A. Carpenter, when a great advance in the charts generally was made. His general chart is that now in use, corrected by subsequent surveys up to 1899. The coasts on the whole are fairly well charted, but some most necessary work still remains to be done before a voyage round these dangerous coral-bound coasts can be said to be free from anxiety. It is, however, worth noting that the long standing notice on charts that "the dangers of the coast of the North Andaman have not been surveyed" is now at last removed, and that the Coco Channel is made safe for ships.

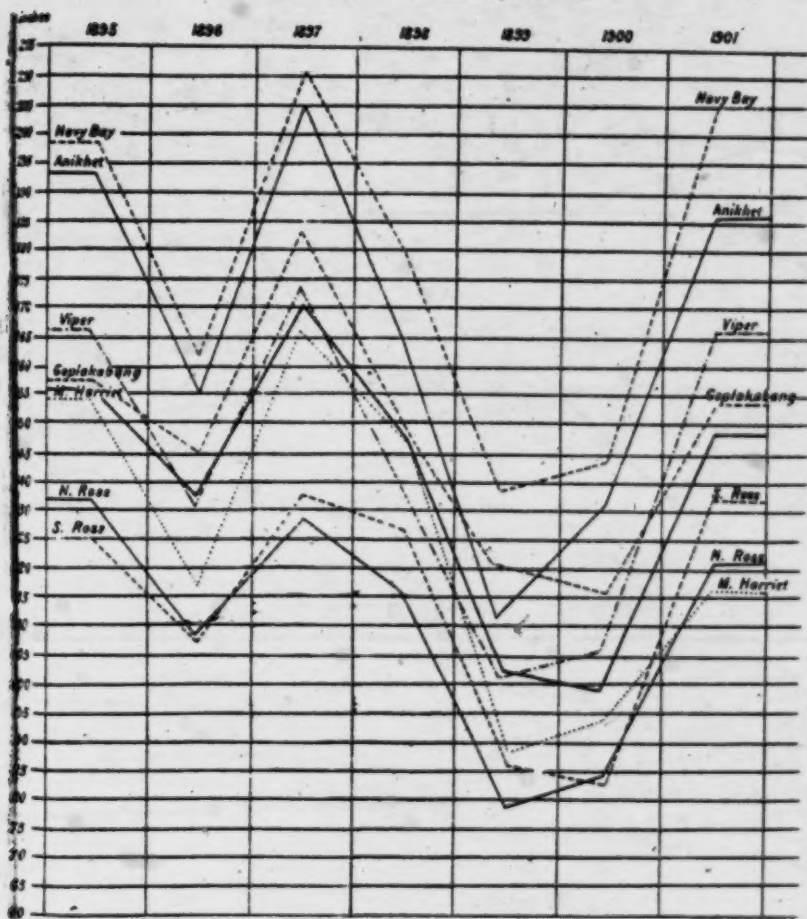
II. METEOROLOGY.

000

Commercial Value of the Meteorology.—Owing to the great value of the information to be obtained at the Andamans as to the direction and intensity of cyclonic storms and as to weather prognostications generally as regards the eastern and northern portions of India, a well appointed meteorological station has been established at Port Blair on Ross Island since 1868.

Two very serious considerations for commerce are involved here: *viz.*, timely and reliable warnings of storms in the Bay of Bengal and reliable weather forecasts. Accuracy in storm warnings and weather forecasts depends on the establishment of a number of meteorological reporting stations all over a given

DIAGRAM SHOWING RELATIVE AND ANNUAL RAINFALL OF PLACES CLOSE TOGETHER
ABOUT PORT BLAIR HARBOUR FOR SEVEN YEARS.



Broad line — Mean of all Stations.

Central Station (Official)	South	Ross from which—		Height
North Ross is distant directly	1	Mile North	---	150 ft.
Mount Harriet	3	" North West	"	1,200 ft.
Goplahabang	7	" North West	"	sea level.
Viper	5	" West South West	"	150 ft.
Anikhet	5	" West North West	"	100 ft.
Navy Bay	2	" South West West	"	200 ft.

[facing p. 38]

000 area of sea and land. It is therefore not sufficient for accurate warnings and forecasts to have meteorological stations round the Bay; they must be also established if practicable within it. The Andaman and Nicobar Islands can provide a number of such stations right across the Bay from north to south.

The magnitude of the interests requiring accurate storm warnings can be gauged thus. In Bengal *excluding Madras and Burma*, about 4,400 vessels of a combined burthen of about 3½ million carrying tons, conveying 800,000 passengers and cargoes to the value of upwards of ₹11½ crores annually, leave and enter the Bengal ports in the coasting trade alone. The ever increasing size of the vessels carrying the trade implies an ever increasing number of passengers and size of cargoes in each bottom and a corresponding increasing value of each individual ship and increasing importance in saving it from loss or damage. So also the magnitude of the interests requiring accurate weather forecasts is very great. Of industries directly depending on the rainfall in the Bay of Bengal:—jute exported from Bengal, raw and manufactured, has an average annual value of about ₹14½ crores and the plant is grown on nearly 2 million acres; rice, as a staple food crop, in Bengal alone has an annual out-turn of 20 million tons raised on between 30 and 40 million acres; tea has an average annual export in Bengal of about 7½ crores, and indigo of about three crores. Again the purchasing power of the native of Bengal depends on the state of the rice crop and hence the rate of piece-goods there depends so much on the rainfall that merchants closely watch it: this trade represents an average annual value of about 14 crores.

The great importance to commerce therefore of weather forecasts has brought about repeated attempts to connect the Andaman Islands with the continent by telegraphs, as otherwise the meteorological observations have merely a scientific value, being received in India too late for practical purposes. In 1867 a serious attempt at a cable to Port Blair failed owing to initial and maintenance costs involved and also the hilly nature of the sea-bottom about the islands. Since 1900 the question has been reopened with a view to establishing a connection with the islands by wireless telegraphy.

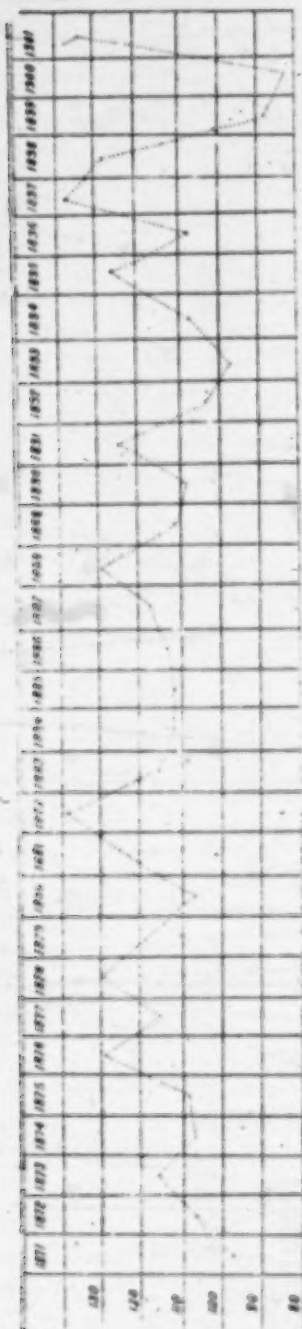
132 **Climate.**—Speaking generally, the climate of the islands may be described as normal for tropical islands of similar latitude. Warm always, but tempered by pleasant sea breezes: very hot when the sun is nothing: irregular rainfall but usually dry during the north-east monsoon and very wet during the south-west: exposed to both monsoons and subject to violent weather with excessive rainfall, but to cyclones rarely, though within the influence of practically every cyclone that blows in the Bay of Bengal, hence the value of the islands from a meteorological point of view. Cyclones have been recorded in every month except February and heavy rain has fallen throughout the year, but cyclones are unusual except from May to November, the early part of November being the most likely season for them, and much rain is not usual from December to May.

Cyclonic Storms.—Accounts and records show that cyclonic storms struck Port Cornwallis in December 1792, the Archipelago in November 1844, and Port Blair in 1864 and November 1891. There are also abundant signs of a destructive storm between Stewart Sound and Port Cornwallis in 1893. The great storms of 1891 and 1893 travelled across the islands in a north-westerly direction creating havoc on both East and West Coasts. There is a full and valuable record of the disastrous storm of 1891 (*Cyclone Memoirs*, No. V., Government of India, 1893).

Rainfall.—The rainfall varies much from year to year and to an extraordinary extent at places quite near to each other. The official meteorological station is situate in by far the driest spot in Port Blair. The official statistics as to rainfall for the past seven years are:—

1895.	1896.	1897.	1898.	1899.	1900.	1901.
125·64	107·23	126·41	127·22	87·01	83·25	132·39

132



RAINFALL IN INCHES FOR 30 YEARS.

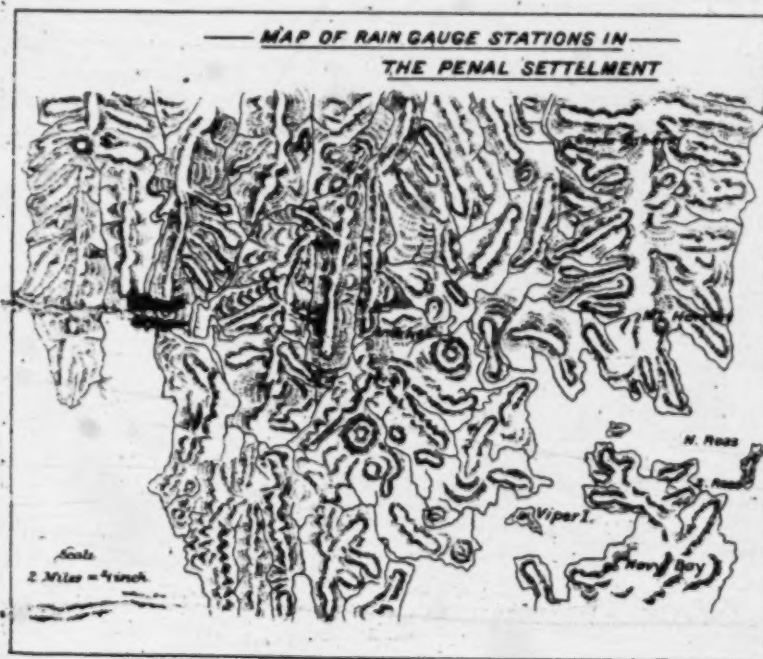
1871 - 1901.

1871	97.56
1872	106.66
1873	115.68
1874	106.46
1875	108.43
1876	129.97
1877	114.82
1878	123.88
1879	119.71
1880	107.46
1881	125.54
1882	137.67
1883	115.00
1884	112.75
1885	111.32
1886	112.50
1887	116.76
1888	128.27
1889	110.35
1890	100.57
1891	124.11
1892	102.25
1893	96.51
1894	117.73
1895	125.64
1896	107.28
1897	136.41
1898	127.22
1899	89.01
1900	83.28
1901	132.63

[facing p. 39]

There are, however, altogether seven rain gauges maintained at Port Blair within an area of 80 square miles with these results:—

	1895.	1896.	1897.	1898.	1899.	1900.	1901.
North End	123-56	106-73	120-68	116-60	78-93	83-50	181-37
South End	123-68	107-48	120-41	127-23	57-91	83-25	122-59
Anikhet	124-97	126-19	105-33	165-08	112-55	231-69	187-38
Gopichand	120-00	145-10	124-02	131-70	123-00	116-68	152-26
Mount Harrold	124-00	117-00	120-00	143-14	82-00	98-00	110-00
Navy Bay	190-17	162-11	212-73	179-73	120-75	144-18	202-64
Viper	166-93	131-50	169-14	140-00	102-57	104-00	160-27
Mean of all stations	120-37	122-42	171-00	147-06	104-48	106-23	145-06



132 Weather.—Calm weather can be counted on in February to April and in October. Fogs and chilly night winds are common in January to March in the valleys and inner harbour and also after excessive rain. Off shore breezes at night and on shore breezes in the day are most marked during the calm weather, due to the difference in temperature of sea and land. March and April are often hazy. Magnetic variation in the Andaman sea in 1904, 0° 40' East, decreasing annually 2'. The normal barometric readings vary between 29.873 and 29.722, being highest in February and lowest in June.

General Statistics.—General meteorological statistics for Port Blair for the last seven years are :—

	1895.	1896.	1897.	1898.	1899.	1900.	1901.
TEMPERATURE.							
Mean highest in shade	April 90.1	April 94.7	April 94.0	April 94.3	Mar. 91.3	April 94.1	April 95.1
Mean lowest in shade	Feb'y. 70.9	Feb'y. 71.7	Jan'y. 73.5	Jan'y. 70.5	Feb'y. 71.3	Dec. 72.9	Dec. 71.9
Highest in shade	April 95.2	May 96.9	April 96.8	April 95.8	April 95.8	April 97.0	April 97.1
Lowest in shade	Feb'y. 66.4	Feb'y. 66.9	Jan'y. 67.8	Mar. 68.2	Jan'y. 67.0	Jan'y. 68.0	Dec. 67.7
Dry bulb mean	84.6	85.6	85.2	84.2	84.5	84.6	84.7
Wet bulb mean	79.9	79.4	78.7	78.4	78.6	83.5	83.6

RAINFALL.							
Most wet days in a month	Aug. 29	Aug. 29	July 29	July 29	Sept. 27	June 27	Aug. 29
Heaviest fall in a month	June 26.29	May 27.55	July 26.97	May 40.58	Sept. 24.85	Sept. 18.44	May 20.81
Months without rain	Jan'y, Feb'y.	Feb'y, Mar.	January.	Feb'y, Mar.	Nil.	February	Nil.
Total wet days	181	178	186	180	177	162	168

WIND.							
N. N. E.	Jan'y, Feb'y.	Jan'y, Feb'y.	Jan'y, Feb'y.	Feb'y, Dec.	Feb'y, Nov.	Jan'y, Nov.	Jan'y, Feb'y.
	Mar., Dec.	Mar., Nov.	Dec.		Dec.	Nov., Dec.	
E. S. E.	April, Oct.	—	Mar., April	—	April, Oct.	—	—
	Nov.	—	Nov.	—	—	—	—
W. S. W.	Mar., June.	June, July.	Mar., June.	May, June.	May, June.	May, June.	May, July.
	July, Aug.	Aug., Sept.	July, Aug.	July, Aug.	July, Aug.	July, Aug.	Aug., Sept.
	Sept.	—	Sept., Oct.	Sept.	Sept.	Sept.	—
W. N. W.	—	April, May.	—	—	—	April	June.
	—	Oct.	—	—	—	—	—
E. N. E.	—	—	—	Jan'y, Mar.	March.	—	—
	—	—	—	April.	—	—	—
S. S. E.	—	—	—	Oct., Nov.	—	October	April, Nov.
N. E.	—	—	—	—	January	February	Mar., Dec.

CLOUDS.							
Clouds are usually	P. E. & C.	C. & E.—P.	P. E. & P. C.	C. & N. Aen.	C. & N. Aen.	C. & Aen. N.	C. & Aen. N.
	P. E. & P. C.	E. & P. C.	—	—	—	—	—

* P. E. = Pseudo-Cumulus; C & C = Cirrus; P. C. = Pseudo-Cirrus; K. = Cumulus; C. N. = Cumulo-Nimbus; Aen. = Alto-Cumulus.

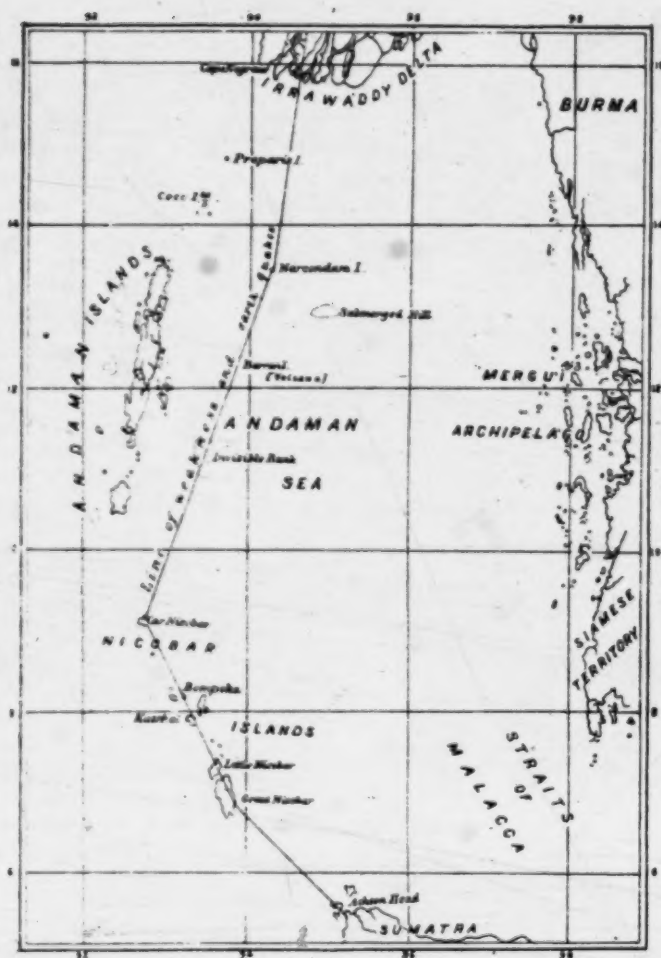
Tide.—The tidal observatory with self-registering gauge on Ross Island, established in 1890, is in latitude 11° 41' N., longitude 22° 45' E. The Port Blair tide tables are printed by authority from local data. The heights are referred to the Indian spring low-water mark, which for Port Blair is 3.53 feet below mean sea level. The mean range of greatest ordinary springs is 6.6 feet. The highest high-water and the lowest low-water are 8.0 feet above and 0.8 feet below the datum above mentioned. The apparent time of high-water at the full and change of the moon is 9h. 36m. At various points of the great harbour of Port Blair the actual times for the tide depend on wind, strength of current, and distance from the open sea. The average variation in time of high tides at the several important points is from 18m. to 57m. later than Ross and in height it is from 20 inches less to 17 inches more than Ross. Wind and current will at these points affect time by as much as 29m. either way, and height by as much as 9 inches either way.

III. GEOLOGY.

135
133 General Geology.—There has been no geological survey of the Andamans, but expeditions by experts have been officially undertaken to make preliminary examinations of the islands. These examinations have been carried on under practical difficulties of every kind, not the least being the dense and lofty forests with which the entire islands are covered. Judging by the reports of such

MAP OF THE EARTHQUAKE LINE IN THE
ANDAMAN SEA.

133



facing p. 41

135 expeditions, the submarine ridges forming these islands contain much that is
 133 geologically characteristic of the Arakan Yomas and formations common also to the Nicobars, to the islands off Sumatra and to Sumatra itself. The older rocks, common also in the same form to the Nias Islands on the West Coast of Sumatra are probably early tertiary or possibly late cretaceous, but there are no fossils to indicate age. The newer rocks common to the Nicobars and Sumatra are in Ritchie's Archipelago chiefly and contain radiolarians and foraminifera. There is coral along the coasts everywhere and the Sentinel Islands are composed of the newer rocks with a superstructure of coral, but no atoll is known in the vicinity of the islands. There is a good deal of serpentine rock, also some jasper, chromite, and copper and iron pyrites, and small pockets of coal. About Port Blair a firm grey sandstone identifiable with the Negrals rocks occurs with interbedded slaty shales, and not infrequently nests of coaly matter and occasionally of conglomerate and pale grey limestones. This sandstone is the characteristic rock of the neighbourhood and is generally, if not always, non-calcareous. In the Archipelago and over a large area in the Andamans, the islands are formed of soft limestones made of coral and shell sand, soft calcareous sandstones and soft white clays, with occasionally a band of conglomerate. Green and red jaspers beds, similar to those of Manipur and Burma and the Nicobars, are found, which may belong to the same series as the sandstones and shales. On Entry Island in Port Meadows are beds of probably volcanic origin, perhaps later than the Port Blair sandstones. Intrusive rocks of the serpentine series and a scoriaceous rock resembling lava occur in the Cinque Islands, Rutland Island, and in spots on the South and Middle Andamans. Hard breccias of volcanic origin are found at Namunagar in the Penal Settlement and yield an excellent building stone. Good red clay for bricks is found abundantly in pockets. Lime of the best quality is obtained from old coral, but a workable limestone exists in limited quantities. A pretty reddish building marble is also found. Red ochre (*Kciol*) is found in considerable quantities in pockets and used, when mixed with gurian oil, as an excellent covering for shingled roofs. Mica in probably workable quantities has been found about Navy Bay Hill in Port Blair Harbour.

133 **The Subsidence of the Islands.**—A theory of a still continuing subsidence of the islands was first formed by Kurz on his investigation of the vegetation in 1866 and has since been confirmed by Oldham in his geological report of 1884, though with some reluctance owing to the fact that the Arakan Coast to the north and the Nicobars are showing signs of recent elevation. The subsidence seems to be of recent origin, and signs of its continuance, most markedly on the East Coast, are to be found at several places:—Port Mouat, Ranguchang on the East Coast of the South Andaman near Port Blair, Outram Harbour and Have-lock Island in the Archipelago, the northern ends of the Little Andaman, the North Sentinel, and the North Andaman. The extremely interesting islands of Narcondam and Barren Island are volcanoes of the general Sunda group, the extinct volcano of Narcondam belonging apparently to what is known as the Pegu group and the quiescent Barren Island to the Sunda group proper. Barren Island was last in eruption in 1803, but there is still a thin column of steam from a sulphur bed at the top and a variable hot spring at the point where the last outburst of lava flowed into the sea, showing lately a temperature of 107° Fahr.

Earthquakes.—Although the Andamans lie along or at any rate are close to a recognised subterranean line of weakness, earthquakes of great violence have not so far in the short time of British occupation been recorded. Recorded dates of earthquakes are August, 1865; February, 1880; and then shocks at times till December 31st, 1881; February, 1882; August, 1883; July, 1886; July, 1894; October, 1899. The sound of the great seismic disturbance in the Straits of Sunda on August 26, 1883, was heard at Port Blair at 9 P.M. of that day and the extra tidal waves caused thereby were felt at 7 A.M. on the 27th. The great Assam Earthquake of 1897 was not felt at all.

It is possible that the reason for the Andamans escaping violent earthquakes while the Nicobars are subject to them is that they are just off the line of greatest weakness, which may run from Sumatra through Great and Car Nicobar, Barren Island, Narcondam to the Arakan Yoma.

136

Marine Fauna.—The marine fauna of the Andamans is of unusual interest and the aquarium on Ross Island under construction should prove of great scientific value. On examination the marine life goes to show what other physiological facts have proved—the close connection of the Islands with both Burma and Sumatra and the distant alliance with the Indian Peninsula. The land fauna, in several particulars, shows that the Andamans are closely allied zoologically with their neighbours, Arakan and Burma.

Economic Zoology.—The economic zoology of the islands has been thus summarised by Major A. R. S. Anderson.

"The coral reefs and dead shells afford an immense field for obtaining a very fine quality of lime, which has for many years past been used in the Andamans in building operations. Sea cucumbers or trepang are collected, dried and exported to the Chinese market. Wax and honey are obtainable in fairly large quantities in the forests; the honey is, however, of rather poor quality. Cattle bones in large numbers can easily be picked up all round the islands wherever there is a sloping shore. Ornamental shells can be obtained with great ease in the rocky pools, reefs and shallow waters. Edible oysters are very plentiful. Pearls and mother-of-pearl oysters are occasionally obtained, but no systematic search for these valuable products has ever been instituted. The edible turtle and tortoise-shell turtle are plentiful. The former are sparingly exported and the shell of the latter is collected and exported. Edible birds'-nests of the finest quality are found in many of the caves in both groups of Islands. They are exported to the Chinese market."

Conchology.—The existing sea shells have been extensively collected by local residents for many years past, but there does not appear to be anything specially distinctive about them, and the various species have been incorporated into the general standard works on conchology. The presence of *scalaria preciosa* and of *argonauta argo* is noteworthy. But the land shells are more distinctive in their nature, and seem to corroborate the evidence procurable from the flora and the fauna of the Islands. They have received a good deal of attention both from scientific expeditions and from local collectors. There was a well appointed expedition fitted out by the Danish Government in 1846, in the frigate *Galathea* in which the zoologist, Reinhardt, first paid much attention to the mollusca. The conclusion apparently to be drawn from such knowledge as has been accumulated is, on the high authority of Godwin-Austen, that there is a distinct and close relationship in the past shown with Burma and Arakan by many closely allied species, and equally marked is the paucity of forms having an alliance with Peninsular India. On the other hand, some species are common to these islands and to Sumatra and Java.

137

Forests.—A section of the general Forest Department of India has been established in the Andamans since 1883 and, in the neighbourhood of Port Blair, 156 square miles have been formally set apart for regular forest operations. The activity of the department is strictly limited by the amount of convict labour from time to time available, as there is no indigenous labour whatever. The annual value of forest produce used in the Settlement during the last seven years has averaged ₹1,13,683, and the annual value of exported timber has averaged for the same period ₹1,69,633. This last product is increasing rapidly in value.

313
137

The Timber and its Economic Uses.—The timber available for economic purposes is both plentiful and various. It is divided for commercial objects into three classes, known by their commercial names thus:—First class, Padouk, Koko, Chuglam, Marble-wood, Satin-wood; Second class, Pyimma, Bombway, Chai, Lakuch, Lalchini, Pongyet, Thitmin, Mowha, Khaya, Gangaw, Thingan; Third class, Didu, Ywegyi, Toungpeingyi and Gurjan. Padouk is the chief timber for export to Europe at a very high price per ton, but other first class timbers also find a market there. Third class timbers find a ready market in Calcutta, while the second class are extensively used locally.

The trees chiefly used as timber by the Andamanese for their own purposes are mangrove, padouk, *melochia velutina*, some of the *sterculiaceae*, *bombax insignis*, *areca lara*, pandanus, bamboo, *anadendron paniculatum*. They also gather and eat the fruit of a great variety of trees and use the leaves of the following for medicinal purposes:—*trigonostemon longifolius*, *alpinia* species. *Calamagrostis laciniosa*.

Padouk (*pterocarpus dalbergioides*) can be used for buildings and boats, for furniture and fine joinery, and for all purposes to which teak, mahogany, hickory, oak, and ash are applied. It seasons quickly and easily, and is immune from the attacks of white ants and borers, except the marine worm (*teredo navalis*), and from rot of all kinds: colour, pale and dark red and brown. Koko (*albizzia lebbek*) is used for battens and furniture; colour, greenish grey, light brown and chocolate with dark markings. White Chuglam (*terminalia dilatata*) and black Chuglam (*myristica irya*) are used for furniture, oars, shafts, and planking; colour, grey with darker markings. Marble or zebra wood (*dioppyros kurtii*) makes furniture and joinery; colour, ebony with streaks of grey or light brown. Satin-wood (*murraya exotica*), which is not the satin-wood of Ceylon (*chlorozylon swietenia*), makes delicate furniture; colour, yellow. The proper names for the woods of the second class are as follows:—Pyimma, *lagerstramia hypoleuca*: Bombway, *terminalia procera*: Chai, *alphonsea ventricosa*: Lakuch, *artocarpus lakoocha*: Lalchini, *calophyllum spectabile*: Ponyet, *calophyllum inophyllum*: Thitmin, *podocarpus nerifolia*: Mowha, *mimusops littoralis*: Khaya, *mimusops elenchi*: Gangaw, *messua ferrea*: Thingan, *loepa odorata*. These are used for a great variety of economic purposes locally connected with the building, ship and carriage making, furniture and joinery trades. Of the third class timbers, Didu (*bombax insignis*) is used for tea boxes and packing cases; Toungepeingyi (*artocarpus chaplasha*) for cases and planking; Ywegyi (*adenanthera pavonina*) for inferior cabinet furniture; Gurjan (*dipterocarpus turbinatus*) for slabs and planking and wood-paving. Lakuch and Ywegyi yield a yellow dye, Khaya the pagoda gum of Madras, Gurjan a resin and the well known oil.

The great mangrove swamps supply unlimited fire-wood of the best quality, and the bark of the trees a tan, as does also that of the bombway. The best mixture for steeping wooden shingles, is 3 lbs. of gurjan oil, 1 lb. of crude petroleum, 1 lb. of red ochre or metallic paint: the first and third ingredients are produced in the Andamans. Other minor products of the forests are several species of bamboo and cane and two thatching palms, *nipa fruticans* and *licuala peltata*. The cane roots are largely used in Calcutta for walking sticks: the majority of those sold by street vendors there from 4 annas to 8 annas each are from the Andamans. The inner bark of the *sterculia villosa* is used for making elephant harness for dragging timber, and the long climbing canes for ferry ropes and boat fenders. As regards general capabilities the Andaman forests, in addition to the invaluable and largely spread padouk, there is an extremely abundant supply of gurjan, gangaw (the Assam iron-wood) suitable for sleepers, and didu for tea boxes. Labour only is required to bring them on to the suitable markets. Safe anchorages are numerous and there is no difficulty in providing convenient points at which to ship the timber when extracted, especially as the localities of the valuable timbers are situate on, or near to, navigable creeks leading direct to the sea and thus rendering the forests capable of easy and economical working.

Imported Flora.—Both Kurs and Prain have written elaborately on the imported flora of the Andamans, and among the intentionally introduced plants and trees may be mentioned tea (*camellia theifera*), Liberian coffee (*coffea liberica*), Cocoa (*theobroma cacao*), Ceara rubber (*manihot glaziovii*) which has not done well, Manilla hemp (*musa textilis*), teak (*tectona grandis*), cocoa-nut (*cocos nucifera*), besides a number of shade and ornamental trees, fruit trees especially of the anti-scorbutic kinds, vegetables and garden plants. Among the shade trees, the most interesting is the flourishing rain-tree (*pithecolobium saman*) of the West Indies and American Continent, and among the vegetables the Otaheite potato (*dioscorea species*). An attempt has also been made to introduce the Bahamas aloe (*agave sisalana*), but though it has flowered and given out bulbils in quantities, success is not yet assured. Tea is grown in considerable quantities and the cultivation is under a department of the Penal Settlement. The outturn for the last seven years has been on an average 2,619 chests per annum.

General Character of the Forests.—Generally the forests are filled with ever-green trees covered all over with climbers, but patches of deciduous forest

137
313

137

137 occur, sometimes over large tracts, conspicuous in the dry season when the leaves are off the trees. The huge buttressing of several species is a peculiar feature, and so is the growth of the forest in certain parts in belts, dependent apparently on the soil below: e.g., the tracts of the bamboo (*bambusa schizostachyoides*) which almost exclusively occupy the indurated chloritic rock. Aborescent *euphorbias*, screw-pines (*pandanus odoratissimus*), and large cycads give on the coasts a remarkable appearance to the forests. Several palms are commonly seen, though the coconut is not indigenous. The general character of the forests is Burmese, with an admixture of Malay types. In the cleared places about Port Blair the grazing appears to be abundant, but is not really so, owing to the action of two destructive weeds: the needle bearing grass (*avena fatua*), which is pretty but not edible by any kind of food animal and being of a stronger growth than ordinary grazing grass supplants it wherever it is not rigorously kept down; and the sensitive plant (*mimosa pudica*), an imported nuisance, which rapidly covers all open and low lying places and is edible only by goats.

IV. HISTORY.

175 Ancient Notices of the Islands.—The existence of the islands now known as the Andamans has, owing to the ancient course of trade, been reported from quite early times, though which of Ptolemy's island names ought properly to be attached to them may still be regarded as a moot point. Gerini, in his ingenious paper, *Notes on the Early Geography of Indo-China*, (J. R. A. S. 1897, p. 551ff) gives Bazakata for the Great Andaman, Khaline for the Little Andaman. Maniola for Car Nicobar, and Agathodaimonos for Great Nicobar. In the medieval Latin editions of Ptolemy a remark somewhat as follows often appears opposite Bazakata:—"cuius incolæ vocantur Aginatæ qui nudi semper degere feruntur, in hac conchæ sunt multæ." While it is on Maniola that the people are called *anthropophagi*. Even if one is inclined to accept this plausible theory, it is nevertheless, as will be seen from what follows, probable that Yule is right in his conjecture that Ptolemy's *Agathou daimonos neos* preserves a misunderstanding, as perhaps does also the contemporary *Aginatæ* (with its later corruptions *Allegate*, *Alegada* on maps) for its inhabitants, of some sailors' term near to the modern Andaman. The old error that Ptolemy's maps were drawn by Agathodemon, the grammarian of the 5th Century, A.D., is repeated in Portman's *History of our Relations with the Andamanese*, 1899, p. 50 and elsewhere.

Little Andaman, as a name, has a curious and obscure history on the old maps. In some of them we find Isle d'Andemaon (and Andaman) and also Isle de Maon (and Man), as if "Andaman" was the Great Andaman and "Man" the Little Andaman. Then in maps we have Chitre Andaman 1595, 1642: Chique Andemaon 1710: Cite Andemaon 1710, 1720 and Crita I. 1720 obviously corrupted out of Chitre, Chique and Cite. I have seen also Cite d'Andaman responsible for a town or city in the Andamans! And it is just possible that Chique Andemaon is responsible for the modern Cinque Islands between Great and Little Andaman, which are not five but obviously two islands. Chetty Andaman survived till 1858. Little Andaman, in its modern form, does not appear till the maps of Blair in 1790 odd.

175 101 Origin of the name.—The Chinese and Japanese knew the Islands respectively as Yeng-t'o-mang and Audaban in the first millenium A.D. (vide Takakasu's Edition of I-tsing pp. xxx and xxviii ff) which clearly represent the Andaman of the *Arab Relations* of 851 A.D. Then comes Marco Polo with his Arabic dual form Angamanain in 1292. After which we have Nicolo Conti in 1430 with Andemania, and after him almost every eastern traveller and map-maker with some form of "Andaman." All these terms seem obviously to be based on the Malay name for the islands, as the Malays of the Peninsula have, for many centuries, used the islands for their piratical practices and for a trade in Andamanese slaves to their own country and Siam (this up to about 1860) and have known them by the term Handuman, which most likely preserves the very ancient Hanuman (monkey, *scil.*, savage aboriginal antagonist of the Aryans) so well-known to the Indian Epics and carried down to the Malays in story and translations.

In the great Tanjore inscription of 1050 A.D. the Andamans are mentioned under a translated name along with the Nicobars, as Timaittivu, "Islands of Impurity" and as the abode of cannibals. In the Chinese *History of the Tang Dynasty* (618-906 A.D.) they are called the land of the Rakshasas, and the Andamanese are to-day regarded as Rakshasas (or ogres, i.e., traditional savage antagonists of the Aryans) by the Natives of India on being first seen, and were so called at once when they appeared in the streets on a visit to Calcutta in 1883. As the abode of the Rakshasas the Andamans were also known to the Southern Indians in mediæval times and this persistence in regarding the Andamanese as the Rakshasas or their descendants confirms the ancient derivation of "Andaman" as a name from Hanuman through Malay Handuman. 175
101

The Andamanese have returned the compliment and know all Orientals as Chauga or ancestral ghosts, i.e., demons, and have preserved an ancient knowledge of them in a term for trepan or sea-slug as the "Oriental's slug," the collection of this valuable edible and of the equally valuable birds'-nests being one object of the visits of the Malays, Burmese and Chinese in days gone by, in addition to trapping slaves, which last practice no doubt had something to do with the savage hostility of the Andamanese towards all who landed on their shores.

Mediæval and Modern Notices of the Islands.—The notices of the Islands by the old travellers are continuous, and they regularly appear in some shape or other on all maps from the "Ptolemies" of the 15th-16th Century onwards, till we reach the middle of the 18th Century, when the East India Company's and Royal Naval commanders and surveyors began to make accurate reports of parts of the coasts in charts preserved for us in the works of the indefatigable Dalrymple. Owing to the piracies and ill-treatment of shipwrecked and distressed crews, the Company under Lord Cornwallis commissioned the great surveyor Archibald Blair in 1788 to start a Settlement on the ordinary lines, to which convicts were afterwards sent as labourers. Blair, with the acuteness he shows in all his work, fixed upon the harbour he called Port Cornwallis, but now known as Port Blair, for the Settlement and began his labours there in 1789. The Settlement flourished under him at that spot, but was removed in 1792 for strategical reasons to the present Port Cornwallis, where it gradually perished miserably in 1796 from the effects of a bad, unhealthy site and want of experience of the climate. Here it was under Major Kyd. Blair's and Kyd's *Reports* have all been preserved in the *Bengal Consultations* and are published in the *Indian Antiquary*, vols. xxviii et seq. 175

Modern History of the Islands and People.—Thereafter notices of the Andamans are not numerous, but they must have occupied the Government attention, for a formal résumé of information was officially drawn up in 1802. In 1824 the fleet, formed for the attack on Burma, made its rendezvous at Port Cornwallis. In 1825 J. E. Alexander, *Travels from India to England*, gives an interesting account of a landing at the Little Andaman. In 1836, Malcom, the missionary, notices the Andamans in his *Travels in Southern Asia*. In 1839, Dr. Helfer, the geologist, was murdered north of Port Cornwallis. In 1844 the transports *Briton* and *Runnymede*, from Sydney and Gravesend, respectively, were wrecked together on the Archipelago in a cyclone on 12th November. They contained detachments of the 10th, 50th and 80th Regiments, and the full record of the occurrence that has been left affords a fine example of pluck, endurance and resource in a great emergency. In 1850, a Mr. Quigley from Moulmein wrote a misleading and mischievous account of a visit to Interview Island. There is preserved an interesting account of the wreck of the *Emily* in 1849 off the West Coast and of the subsequent efforts to assist the crew. On this occasion the second mate was murdered by the aborigines, and there are records at this period of other murders dating before 1848 and continuing on till 1856. These led to the second occupation of the Islands, a step which was hastened by the outbreak of the Mutiny in 1857. This event threw a large number of mutineers, deserters and rebels on the hands of the Government, with whom it was difficult to deal, and in November of that year it was finally decided to send them to the Andamans to start the Settlement. The Government sent the "Andaman Committee" to make a preliminary exploration, with Dr. Mouat as president, and this Committee, in a *Report* remarkable for its common sense, fixed upon Port Blair as the site of the Settlement. Upon this report and an

175 equally able report by Captain Hopkinson, Commissioner of Arakan in 1856, the great experiment in treating convicts was commenced, one of the last acts of the East India Court of Directors being the formal confirmation of the Indian Government's proceedings. In 1872 the Andamans and Nicobars were formed into a Chief Commissionership, and in that year occurred the one event of general importance that has made the Andamans well known: the murder of Lord Mayo, Viceroy of India, by a convict while on a visit of inspection to the settlement, for the welfare of whose convict population he had worked so sympathetically.

CHAPTER III.

ETHNOGRAPHY.

- I. THE RACE.—The Affinities of the Race—Its Antiquity—Early Descriptions—The Charge of Cannibalism—The Language of the Aka-Beads Tribe used in the Report—The Twelve Tribes—Their Division into Three Groups—The Distinctions between the Groups—The Long-shore and Jungle Andamanese—The Former Isolation of the Tribes—Their Sympathies and Antipathies—Fighting Capacity—The Hostile Jarawas—Colebrooke's Knowledge of them (1789)—Explanation of the Name Mincopie for the Andamanese—Relations with the English—Jarawa Raids.
- II. PHYSICAL CHARACTERISTICS.—Portman and Molesworth's enquiries—Man's enquiries—High Temperature—Breathing—Age—Reproduction—Endurance—Food—Skin—Hair—Bodily Parts—Diseases—Medicine—Appearance.
- III. MENTAL CHARACTERISTICS.—Sense Development—Character—Mental Capacities—Social Emotions—General Capacities.
- IV. HABITS AND CUSTOMS.—Dwellings—Government—Religion—Superstitions—Mythology—Initiatory Ceremonies—Amusements—Music—Song—Games—Naming of Children and Adults—Marriage Relations—Death Ceremonies.
- V. ARTS.—Stone Implements—Weapons—Domestic Arts—String and Netting—Weaving—Pottery—Wool and Cane work—Ornamentation, Personal and Domestic.

I. THE RACE.

The Affinities of the Race.—The Andaman Islands, so near to countries that have for ages attained a considerable civilisation and have been the seat of important empires, and close to the track of a great commerce which has gone on for at least 2,000 years, continue to our day the abode of savages as low in civilisation as almost any known upon earth, though close observation of them discloses the immense distance between them and the highest of the brute beasts in mental development, one most notable fact being that they eat nothing raw, cooking all their food however slightly and making pots for the purpose, and this from time immemorial. 144

As to what general variety of the existing human beings the Andamanese belong, it can be clearly predicated of them that their various tribes belong to one people, speaking varieties of one fundamental language, and that they are Negritos. Many theories have been advanced as to their affinities; the most credible being that they are connected with the Semangs of the Malay Peninsula and the Aetas of the Philippines, and the silliest, though not the least persistent, that they are descendants of shipwrecked cargoes of African slaves. On the whole the safest thing to say about them is that they are probably the relics of a bygone Negrito race, now represented by themselves, the Semangs, and the Aetas, that in very ancient times occupied the south-eastern portion of the Asiatic continent and its outlying islands before the irruptions of the oldest of the peoples, whose existence or traces can now be found there. In this view the Andamanese are of extreme interest as preserving, owing to an indefinite number of centuries of complete isolation, in their persons and customs the last pure remnant of the oldest kind of man in existence. The possibility of their representing the archaic type of the Negrito and the consequent extreme ethnological interest they arouse was long since pointed out by Sir W. Flower.

It is to be noted however that Professor Owen considered them to be not connected on anatomical grounds with the people of any existing continent. A notice of the points on which Semangs and Andamanese agree and differ will be found in Appendix A.

The antiquity of the Andamanese on their present site is proved by their kitchen-middens, rising from 12 to 15 feet and more in height, and in some cases having fossilised shells at the base. As has been already noted, the kitchen-middens show that the Andamanese now gets his food just as he did in the days when the now fossil shells contained living organisms. 172

172

The largest and traditionally the oldest, the original, home of the race by a consensus of Andamanese opinion and worth scientific exploration (any other to be greatly deprecated), is the kitchen-midden of Wota-Eni on Baratang in Elphinstone Harbour on the east coast of the South Andaman.

In reference to the kitchen-middens it is worth noting that all Andamanese tradition commences with the cataclysm accompanied by a subsidence of a large portion of the surface of their old country already noticed, and the people point to certain ancient kitchen-middens, such as that at Port Mouat, on the sea level to prove it. They say that these were commenced by the survivors of the cataclysm and that the sites were previously high up on the mountain sides, where no one could build a kitchen-midden.

175

Early Descriptions.—I-Tsing, the Chinese Buddhist monk, in 672 A. D. (Takakasu's Ed. p. xxx) mixed up in his account of his travels the Andamanese with the Nicobarese, and describes them thus:—

"The men are entirely naked while the women veil their person with some leaves. If the merchants in joke offer them their clothes, they wave their hands (to tell that) they do not use them."

But the earliest distinct notice of the Andamanese is in that remarkable collection of early Arab notes on India and China (851 A. D.), which was translated by Eus. Renaudot and again in our own time by M. Reinaud. It accurately represents the view entertained of this people by mariners down to our own time.

175
266

"The inhabitants of these islands eat men alive. They are black with woolly hair and in their eyes and countenances there is something quite frightful * * * they go naked and have no boats. If they had they would devour all who passed near them. Sometimes ships that are windbound and have exhausted their provision of water touch here and apply to the natives for it; in such cases the crews sometimes fall into the hands of the latter and most of them are massacred."

This traditional charge of cannibalism still persists, though it is now, and almost certainly has always been, entirely untrue. Of the massacre of shipwrecked crews up till quite recent times there is no doubt; but the policy of conciliation, which has been unremittingly pursued for the last forty years, has made the coasts quite safe for the shipwrecked, except at points where the Jarawas touch the coast and the wilder Onges reside, the south and west of Little Andaman, the North Sentinel Island, south of Rutland Island and Hut Bay on its western coast, Port Campbell and some few miles to the north of it on the west coast of the South Andaman. Everywhere else shipwrecked mariners would find the people not only friendly and helpful, but likely to give notice to Port Blair at once of their predicament.

[766]

Charge of Cannibalism.—The charge of cannibalism seems to have arisen from three observations of the old mariners. The Andamanese attacked and murdered without provocation every stranger they could on his landing; they burnt his body (as they did in fact that of every enemy); and they had weird all-night dances round fires. Combine these three observations with the unprovoked murder of one of themselves and the fear aroused by such occurrences in a far land in ignorant mariners' minds, century after century, and a persistent charge of cannibalism is almost certain to be the result.

101

Language of the Aka-Beadá Tribe used in the Report.—The tribe occupying the shores of the Harbour of Port Blair and its islands at the British occupation in 1855 was, in its own tongue, the Aka-Bea-da. Its language was the first to be studied and its customs the first to be ascertained. It may still be called the tribe that is the best known and understood.

Every tribe has its own name for itself and its neighbours, and it is therefore necessary for the purposes of this *Report* to adopt one set of names only throughout, and the set most convenient is naturally that of the Aka-Bea-da. In this language *aka* is a prefix with small variations to nearly all tribal names and *da* is a suffix used with almost every isolated noun. For the sake of brevity I have throughout this *Report* discarded both these affixes and used the roots only of tribal names. But it must be understood that in actual speech an Aka-Bea would, in answering such a question as "what is your tribe?", reply

"Aka-Bea-da;" and in using his tribal name in the course of a sentence he would say "Aka-Bea." In this way the full and abbreviated forms of the Andamanese Tribes as named by the Aka-Bea Tribe are as under:—

The Andamanese Tribal Names according to the Aka-Bea Language.

Full.	Abbreviated.
Aka-Chariar-(da)	Chariar.
Aka-Kora-(da)	Kora.
Aka-Tabo (da)	Tabo.
Aka-Yere-(da) (also Aka-Jaro-da)	Yere.
Oko-Juwai-(da)	Juwai.
Aka-Kol-(da)	Kol.
Aka-Bojigiyab-(da)	Bojigiyab.
Aka-Balawa-(da)	Balawa.
Aka-Bea-(da)	Bea.
Ōnge	Ōnge.
Jarawa-(da)	Jarawa.

Below is given a table of the names given to themselves and each other by the five South Andaman Tribes or Bojigngiji Group, traditionally sprung from one tribe. It brings out the following facts:—in each language of the Group the prefixes and suffixes differ much and the roots remain practically the same throughout for the same sense. These facts strongly indicate one fundamental tongue for this group of languages.

Table of the names for themselves and each other used by the five South Andaman tribes or Bojigngiji group.

Sense.	Tribe.	Bea.	Balawa.	Bojigiyab.	Juwai.	Kol.
Fresh-water	Bea	Aka-Bea-da	Akat-Bea.	O-Bea-da	Oko-Beye- lekile.	O-Bea-che.
Opposite-side	Balawa	Aka-Bala- wa-da.	Akat-Bale	O-Pole-da	Oko-Pole- lekile.	O-Pole-che.
Speak the language	Bojigiyab	Aka-Boji- gyab-da.	Akat-Bo- jigiyab- nga.	O-Puchik- war-da.	Oko-Puchi- kyar- lekile.	O-Puchik- war-che.
Patterns cut on bows	Juwai	Aka-Juwai- da.	Akat-Juwai	O-Juwai-da	Oko-Juwai- lekile.	O-Juwai- che.
Bitter or salt taste	Kol	Aka-Kol-da	Akat-Kol.	O-Kol-da	Oko-Kol- lekile.	O-Kol-che.

So too Yere, Jeru or Jaro for the Aka-Yere Tribe means a (sort of) "canoe" in all the languages and Ōnge means "a man" in its own language.

The Twelve Tribes.—An Andamanese individual, as the people themselves recognise, belongs to a family, which belongs to a Sept, which belongs to a Tribe, which belongs to a group of tribes or division of the race. The first two of these without being specifically named are recognised, the last two have specific names.

The Census proved the existence of twelve tribes of the Andamanese, each with its clearly defined locality or rather "run," with its own language, and to a certain extent its own separate habits. The tribes are from north to south: Chariar, Kora, Tabo, Yere, Kede, Juwai, Kol, Bojigiyab, Balawa, Bea, on the Great Andaman. The Ōnge-Jarawa occupies, with its Jarawa division, the interior of the South Andaman, the North Sentinel, and parts of Rutland Island; with its Ōnge division parts of Rutland Island and the Little Andaman. In the Archipelago is the Balawa tribe. Portman in his *History* divides the Andamanese into twelve tribes, necessarily omitting the Kora and Tabo, but dividing the Jarawas into three tribes according as they inhabit South Andaman, Rutland Island, and the North Sentinel. It is to that painstaking and accurate observer, Mr. E. H. Man, that we are indebted for the true differentiation of the tribes.

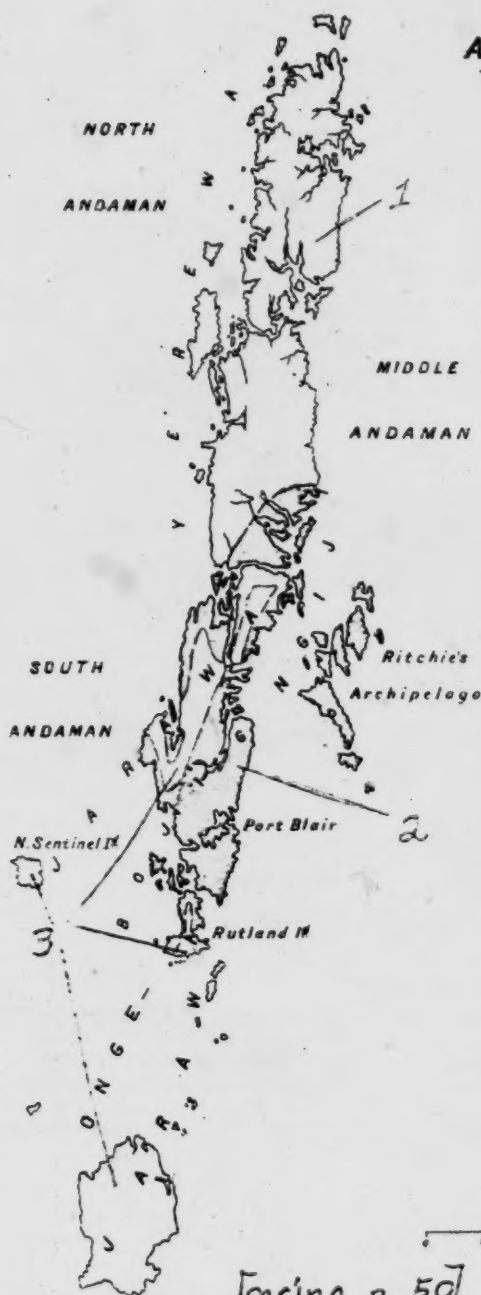
In their present depopulated condition the friendly tribes have amalgamated, as so many savages have done before them elsewhere in other parts of the world in similar circumstances. Thus, though the Kora, Tabo and Yere still keep more aloof than the rest in the jungles of the North Andaman, the whole of the remainder are thoroughly mixed up at the Home and practically throughout the Great Andaman and the Archipelago. This is a matter of the generation

ANDAMAN ISLANDS

THE THREE DIVISION
OF THE ANDAMANESE
BY
TERRITORIES.

Narkondam
(Uninhabited)

Barren II
(Uninhabited)



NORTHERN TRIBES

YERAWA (Blue)

Chariac Kora, Tabo,

Yere, Kede,

SOUTHERN TRIBES

BOJIGNEJ (Red)

Juwai, Kot, Bojigysb,

Bea, Balawa,

OUTER TRIBES

ONGE-JARAWA (Purple)

Onge, Jarawa,

English Miles

0 10 20 30 40 50

[facing p. 50]

[Numbers replace colors -- Analyst]

619

now passing away and I well recollect 25 years ago, though the Bojigiyab were then known to us, the "coming in" of the first Balawa from the Archipelago and of the first Chariar from the extreme north and the difficulty experienced in communicating with them.

In reading the following remarks on the tribes it must always be borne in mind that the statements therein made refer largely to a state of things practically already passed away and never likely to be revived. The reader can without difficulty use his discretion in separating what is from what has been in the course of his perusal.

619

184

Their Division into three Groups.—The Andamanese tribes are by themselves divided into three distinct groups, having certain salient characteristics: the forms of the huts, bows and arrows, of the canoes, of ornamentation, female clothing, hair dressing, and utensils, of tattooing, and of language common generally to the group, but differing in details and sometimes entirely from those of other groups. Judged by this standard the tribal affinities may be thus stated: Northern or Yerewa Group, Chariar, Kora, Tabo, Yere, Kede; Southern or Bojigngiji Group, Bea, Balawa, Bojigiyab, Juwai, Kol; Outer Group, Onge-Jarawa, who do not tattoo. Some of the tribes are divided into septs, fairly well defined under headmen and with a local area of their own, but not under any separate designation.

The Distinctions between the Groups.—It is worth while bringing together this remarkable series of differences dividing the Andamanese into three divisions; differences that more or less run through all matters concerning them.

[304]

(1) *Tattooing.*—Bojigngiji; women are the tattooers cutting the skin slightly with small flakes of quartz or glass in patterns of zigzags or in straight vertical lines; face, ears, genitals, arm and knee pits are excepted. Men and women are tattooed alike. Yerewa; men are the tattooers, cutting the skin deeply with iron pig-arrow heads: short horizontal parallel cuts in three or five lines down the back and front of the trunk, round the anus and legs. Women are tattooed thus as life advances. Onge-Jarawa; no tattooing.

[302]

(2) *Hair.*—Bojigngiji; partial to complete shaving of head. Yerewa; long matted ringlets touching the shoulders. Onge-Jarawas; closely cropped head to a mop. Onge-Jarawa women are not shaved.

[291]

(3) *Ornaments and female clothing.*—Bojigngiji women wear a bunch of five or six leaves in front: Yerewa women a loose tassel of narrow strips of bark: Onge-Jarawa a bunching tassel of fibre. Bojigngiji women are most particular as to clothing: Yerewa women careless. Jarawa women are apt to be quite unclothed. Bojigngijis and Yerevas smear their faces with grey clay mixed with water, white clay in delicate patterns imitating the tattoo marks, red ochre mixed with turtle fat and almond oil in coarse undefined patterns. Onge-Jarawas, with yellow clay mixed with water in coarse patches, red ochre mixed with the above mentioned oils on the head. Onge-Jarawas wear no bone ornaments.

[302]

[531]

(4) *Ornamentation of utensils.*—Bojigngiji and Yerevas, slight: Onge-Jarawas delicate and elaborate.

[323]

(5) *Pots.*—Bojigngijis, pots with rounded bottom: Onge-Jarawas and Yerevas with pointed bottom.

[412]

(6) *Implements.*—Bojigngijis and Yerevas, coarse and rough in manufacture: Onge-Jarawas, often delicate and neat.

[285]

(7) *Baskets.*—Bojigngijis and Yerevas have a 'kick' and stand well: Onge-Jarawas have uneven bottom and stand badly.

[411]

(8) *Bows and arrows.*—Bojigngiji, *karama* bow and large arrows. Yerewa, *chokio* bow and small arrows. Onge-Jarawa, curved long bow and long arrows.

(9) *Arrows.*—Generally common in type to all tribes: long with plain straight point, long with straight point and barbs, short with broad detachable barbed head for pigs.* Onge-Jarawas and Yerevas, multiple headed arrows for fish.

(10) *Harpoons.*—For turtle, dugongs, and large fish among Bojigngijis and Yerevas: none among the Onge-Jarawas.

* As the pig runs off, the trailing shaft is at once caught by something in the jungle and the animal is thus brought up short.

619

184

[50]

[342]

[35]

[35]

[35]

[562]

[51]

(11) *Canoes*.—Bojigngiji and Yerewa, same pattern canoe; Ōnge-Jarawa pattern different from above. Both out-rigged, Bojigngiji has in addition a large dug-out without outrigger.

(12) *Huts*.—Bojigngijis and Yerewas have temporary huts. Ōnge-Jarawas have large permanent communal dwellings.

(13) *Dancing*.—Bojigngijis and Yerewas, sounding board and song and clapping in unison. Ōnge-Jarawa, standing in a ring and alternately bending and straightening the knees: also on occasion kicking the buttocks with the flat of the foot.

(14) *Beds*.—Jarawas sleep on the wood ashes of the fires. Ōnges on raised bamboo platforms. Other tribes on leaves and in sand-holes.

(15) *Food*.—The staple food of the Ōnges is the mangrove fruit, boiled, and they preserve small fish dried after cooking. None of the other tribes do this.

The Long-shore and Jungle Andamanese.—The Andamanese are by themselves again further divided into the Aryoto or long-shore men, and the Eremtaga or jungle-dwellers; the habits and capacities of these two differ, owing to surroundings, irrespective of tribe. Some tribes as the Tabo, Juwai, Kol, and the South Andaman Jarawas, are entirely Eremtaga, while the Balawa, the Chariar, and the Jarawas of the North Sentinel are entirely Aryoto. The Aryoto holds himself to be better than the Eremtaga, but beyond this there seem to be no exclusive distinctions between them and an Aryoto will marry or adopt an Eremtaga.

With the minuteness in matters concerning their surroundings that is characteristic of all entirely uneducated people, the Andamanese recognise a third division of themselves by habits into Adajig or creek-dwellers, i.e., those who live on the shores of the many inlets of the sea on the coasts of the Islands. The habits of the Adajig, however, are practically those of the Aryoto.

Distinctions by habits are quickly lost by the Andamanese. The Jarawas have now no canoes in the South Andaman and are quite incapable of constructing or using them, though all Ōnges have them and so have the Jarawas on the North Sentinel. So also had the Jarawas that Colebrooke met a century ago. And this year (1902) it was ascertained that the young men brought up at the Duratang (Kyd Island) Home and occupied chiefly in market gardening could neither steer nor paddle a canoe, nor take up tracks in the jungles. In one generation, though there was no restriction in communication with their people, they had lost both sea and forest craft.

Former Isolation of the Tribes.—Before the arrival of the English the tribes, excepting actual neighbours, may be said to have had no general intercourse with each other, and excepting some individuals were entirely unable to converse together, though it can be conclusively shown that all the existing languages are directly descended from one parent tongue. Even Septs had but little mutual intercourse and considerable differences in details of dialect and, as has occurred in other island abodes of savages, there must have been a change of dialect or language along about every 20 miles of the coast. The tribes were in fact brought together and made definitely acquainted with each other's separate existence and peculiarities by the influence and exertions of Mr. Man between 1875 and 1880.

609

Sympathies and Antipathies.—The tribal feeling is expressed as follows: friendly within the tribe, courteous to other Andamanese if known, hostile to every stranger, Andamanese or other. The sympathy and antipathy exhibited are strictly natural, i.e., savage, and are governed by descent. The feeling of friendliness lies in an ever-decreasing zone from the family outwards towards sept, tribe, group: hostility to all others. Even septs will fight each other and Aryoto and Eremtaga do not mix much. But there is no "caste" feeling, and tribes will, in circumstances favouring the actions (e.g., living on the tribal borders), intermarry and adopt each other's children. Within the tribe there is no general custom of adoption that children above six or seven rarely live with their own parents. It is an act of friendliness to give up or adopt a child and the custom has had the effect of making the various septs of a tribe hang together much better than would otherwise have been possible.

597

726

Fighting Capacity.—The Andamanese are bad fighters and never attack unless certain of success. During hostilities they never take any precautions as to their own safety by sentries, works, armour, or ruses of any kind, nor in the attack beyond taking advantage of cover. The only ideas of protection yet met with are among the Jarawas, who use trunk-armour consisting of a wide belt of bark and well devised sentry stations on the paths round their permanent communal huts.

619

The Hostile Tribe of Jarawas.—The Jarawas and some Onges kill every stranger at sight, but the Jarawas only are in these days entirely hostile, and on the whole the Onges are friendly, the friendliness dating from the capture and subsequent judicious treatment of 24 men, women and children on the Cinque Islands in January 1885. The only positively dangerous people are thus the Jarawas, and this is to be accounted for in this way. The ancient (as proved by old separate kitchen-middens) incursion from the Little Andaman through Rutland Island of that section of the Ouge tribe, which is now known as the Jarawas, into the South Andaman set up an implacable tribal hostility between them and the Beas, its other occupants, which has been extended to the foreign settlers in Port Blair, and has nowadays become an undying distrust of all strangers and an hereditary hostility towards them.

But Colebrooke, reporting in 1790, gives a vocabulary of a people, now identified with the Ouge-Jarawa tribe by its speech, and as theories have been built up on this fact, it is as well to see carefully when and where Colebrooke met the natives and who they were.

175

Colebrooke's Knowledge of them (1789).—Colebrooke left Diamond Island (Cape Negrais) on December 20th, 1789, and reached Port Cornwallis (now Port Blair) on December 23rd. On the 24th he went up the harbour and saw some natives (Jarawa Tribe) on Dundas Point. On the 26th he went up the harbour with Commodore Cornwallis (brother of the Governor-General), accompanied by a native who had been wounded in a skirmish with his tribe, found to be very hostile by the people of the snow *Viper*, and was kept on board the *Ranger*, Cornwallis's ship. He is described as "very cheerful and quite reconciled to his captivity." They went up the Bumlitian Creek as far as Bumlitian and met another native (Jarawa) who ran away. They dined (lunched) on "Mount Pleasant," a hill on the harbour near Viper Island, and met another Jarawa who exchanged his bow and arrows for a knife. On the 27th the wounded native, who had been on the *Ranger* three weeks, was put ashore by the Commodore, who uniformly treated the savages with extreme consideration. On the 28th they met the Jarawa on Dundas Point whom they had seen before, with a woman and a girl and found him again friendly. On the 29th there was trouble with the Bea Tribe at Phoenix Bay and with the Jarawas at Ariel Creek.

Colebrooke then went to the Nicobars and returned to Port Blair on February 20th, 1790, starting up north on 21st February. On the 23rd March at Port Meadows he saw some of the Bea Tribe leaving Entrance Island and saw some more hostile Beas, whom the party frightened off, coming from the North. On the 26th he went to the Archipelago, and met some hostile Blawas. On the 27th he went into Colebrooke Passage and saw some Bojigrah huts and some more of the tribe, who ran away in Elphinstone Harbour on the 29th. On the 30th they met some hostile Kols in the east entrance to Homfray's Strait and some more on the 31st off the north end of Long Island. On the 3rd and 4th April they found the Yere Tribe in Stewart Sound extremely hostile. On the 6th Blair himself met some Koras at the foot of Saddle Peak, who ran away. On the 7th Blair discovered the present Port Cornwallis and Colebrooke left for India.

It is clear from this that the only native from whom Colebrooke could have procured his *Vocabulary* was the wounded man on the *Ranger* and that man, as the *Vocabulary* shows, was a Jarawa. The tribes of all sorts—Jarawa, Bea, Bojigrah, Balawa, Kol, Yere, Kora, whom Colebrooke met, except in the case of one Jarawa and his family, exhibited either extreme fear or hostility.

175
101

Explanation of the name Mincopie for the Andamanese.—The first word in Colebrooke's *Vocabulary*, the first ever made of any Andaman tongue, is Mincopie for "Andaman Island or native country," whence Mincopie has

become a persistent book-name for the Andamanese. It has been a great puzzle to scientific men ever since, though it is now to be identified, as will be seen later, with "Mongebe, I am (an) Onge," a phrase, which was perhaps pronounced and at any rate sounded in Colebrooke's ears as "Minggobie." His informant, in using it, apparently meant to explain that he was an Onge, or as the Jarawas seem to pronounce the name,—an lnggo.

Relations with the English.—Since the establishment of the Penal Settlement in 1858 an Andamanese Home has been created in Port Blair for the use of the aborigines, and several attempts have been made to civilise some of them and to bring up the children to a Christian education. These attempts have met with no reasonable success, the "civilised" returning to their original savagery at the first opportunity, the children deserting the schools and, except in an instance here and there, retaining nothing of their early education in after life. The existing use of the Home is that of a free asylum to which every Andamanese that likes is admitted. He may stay as long as he pleases and go when it suits him. While there he is housed, fed and taken care of, and for the sick there is a good and properly maintained hospital. From the Home, too, are taken such little necessities and luxuries as the people desire to friends at a distance and during each of the many tours taken round the coasts by the officials. In return the Andamanese of the Home are employed to help in catching runaway convicts, in collecting edible birds'-nests and trepang and other natural produce, and in making "Andamanese curios," from which a small income is derived and expended on them. They have never succeeded in acquiring any true idea of money for themselves and all their earnings have to be administered for them. It is indeed against local rules to give them money, as it is at once spent in intoxicants. The present policy, in short, is to leave them alone and to do what is possible in the conditions to ameliorate their lives. The administrative objects gained by establishing friendly relations with the tribes are the cessation of the former and much too frequent murder of shipwrecked crews, the external peace of the Settlement and the creation of a jungle police to prevent escapes of convicts, and the recapture of runaways.

In the days of Blair and Kyd, 1789—96, the tribes showed themselves to be practically uniformly hostile, despite the conspicuous consideration these early officials exhibited, and remained continuously so after the commencement of the re-establishment of the Settlement in 1858, attacking the working parties of convicts, just as the Jarawas do still, for iron and articles suitable to them and robbing the gardens started for food supplies. These practices had to be repressed by force, and efforts towards friendly relations had to be postponed until respect for the settlers was established. The procedure officially then adopted and carried out with such success in the end by Messrs. Corbyn, Homfray, Man, Godwin-Austen, and Portman in succession was the simple one of providing the Home and visiting the people in their own haunts, as opportunity arose, with suitable presents.

In Appendix B will be found an abstract of the Jarawa raids on the Settlement, which have been continuous since 1872, when they were first differentiated. In the interval they have attacked convicts, usually at their work, on 20 occasions and friendly Andamanese Camps on 12 occasions. That is, they have made 32 attacks in 30 years. In these attacks 27 convicts and 4 Andamanese have been killed; 7 convicts, 2 police constables, and 5 Andamanese have been wounded. In counter expeditions and searches for the raiders 3 Jarawas have been killed, 9 wounded, and 20 captured. Of the captured 18 have been released in a short time and 2 have died. It will be seen thus that the hostility of the tribe is towards all strangers, including their own people, and that the policy of capture, kindness in captivity, and release with presents has not up to date borne any good fruit whatever. This is a very different story to that of their almost equally wild congeners the Onges.

II. PHYSICAL CHARACTERISTICS.

Portman's and Molesworth's Enquiries.—The physical characteristics of the Andamanese have been considerably studied by Mr. M. V. Portman and Major W. S. Molesworth, and as their work has never been published, the

141 following account thereof may serve to draw attention to it. It is to be found in 15 volumes, copies of which are deposited at the India Office, the Home Department Library in Calcutta, and the British Museum. Volumes 10, 11, 14 and 15 contain anthropometric measurements, and medical details of 200 Andamanese: thus—volume 10 of 50 South Andaman males, volume 11 of 50 South Andaman females, volume 14 of 50 North Andaman males, and volume 15 of 60 North Andaman females.

The remaining volumes are plantinotype photographs with explanatory letterpress of Andamanese. Volumes 1 and 2 typical heads: volume 3, heads, full face and profile: volume 4, adse and bow-making: volumes 5 and 6, bow and arrow-making: volume 7, rope-making and hut-building: volume 8, eating and drinking, packing and carrying bundles, utensils, attitudes, torch-making, greeting: volume 9, painting, tattooing, counting: volume 12, full length, full face and profile, view of males: volume 13, of females.

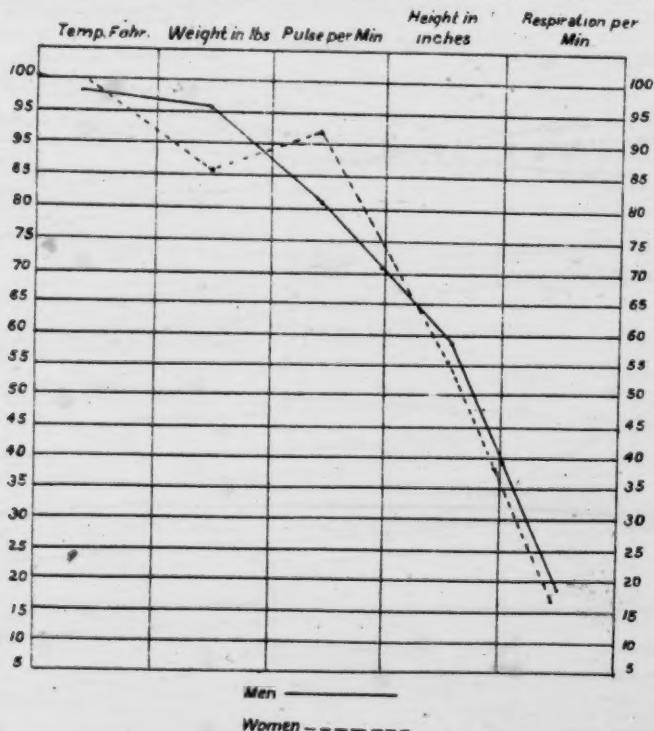
141 147 The following table summarises the results of this elaborate enquiry for general information:—

Andamanese Averages.

	Height in inches.	Temperature Fahr.	Pulse beats per minute.	Respiration per minute.	Weight in lbs.
Men	55½	99°	82	19	96 lbs. 10 oz.
Women	54	99°·5	93	16	87 lbs.

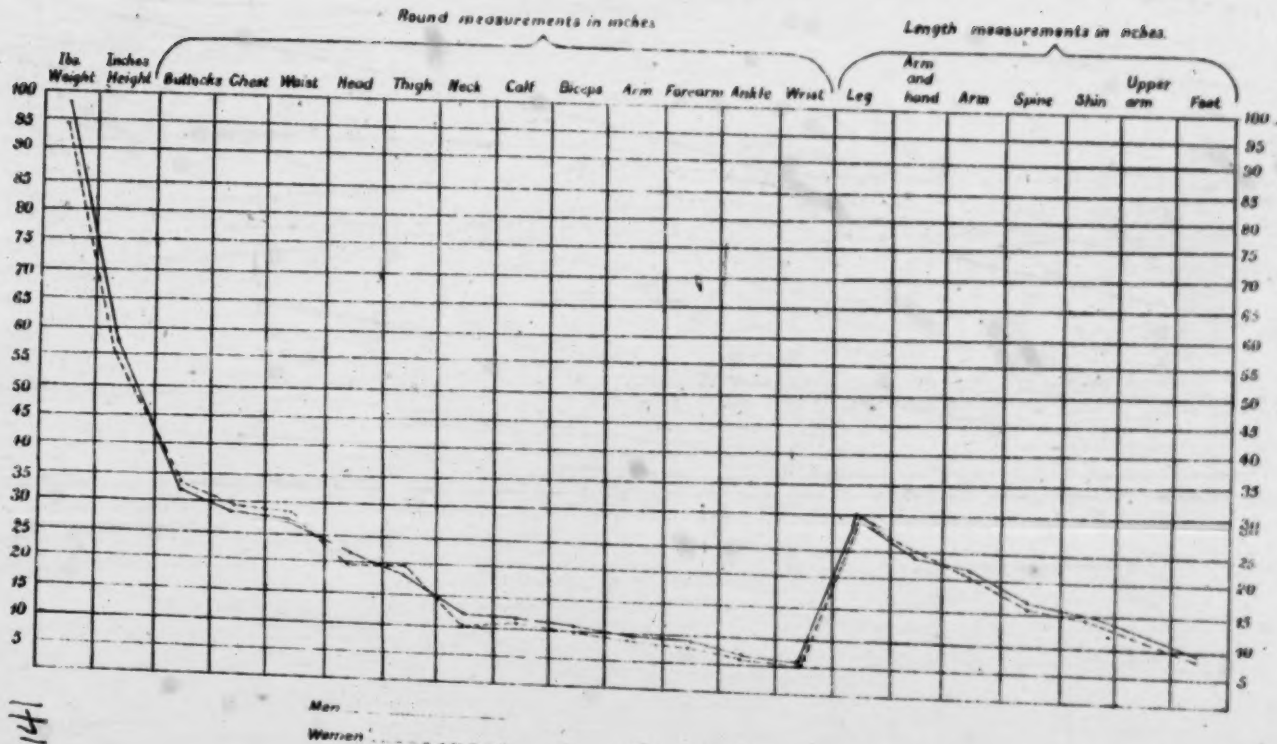
and the accompanying diagram will show the relative physical qualities of the sexes of the adult Andamanese:—

RELATIVE PHYSICAL QUALITIES OF THE SEXES AMONG THE ANDAMANESE



These measurements admit of the comparison of the sexes among the Andamanese; by diagram, thus:—

DIAGRAM COMPARISON THE SIZE OF THE SEXES AMON ANDAMANESE.



[Facing p. 55]

141 **Man's Enquiries.**—In addition to Portman's and Molesworth's measurements there are those taken by Man some 25 years ago of 48 men and 41 women, which give the following average results of much interest :—

Average weight of 40 and body and limb measurements of 48 Andamanese males.

1. Weight	98.12 lbs.
2. Height	55.73 inches.
3. Size round head	21.00 "
4. " " neck	12.30 "
5. " " chest	27.94 "
6. " " waist	27.08 "
7. " " buttocks	31.98 "
8. " " thigh	19.36 "
9. " " calf	12.09 "
10. " " ankle	7.19 "
11. " " biceps	10.60 "
12. " " arm	9.39 "
13. " " forearm	9.03 "
14. " " wrist	5.53 "
15. Length of spine	17.44 "
16. " of arm and hand	24.64 "
17. " from shoulder to elbow	12.47 "
18. " from shoulder to wrist	11.95 "
19. " from ankle to knee	15.65 "
20. " from ankle to hip	30.66 "
21. " of foot	8.29 "

Average weight of 37 and average body and limb measurements of 41 Andamanese females.

1. Weight	94.08 lbs.
2. Height	55.40 inches.
3. Size round head	19.99 "
4. " " neck	10.86 "
5. " " chest	28.74 "
6. " " waist	27.23 "
7. " " buttocks	33.22 "
8. " " thigh	19.23 "
9. " " calf	11.33 "
10. " " ankle	7.14 "
11. " " biceps	9.98 "
12. " " arm	9.10 "
13. " " forearm	8.41 "
14. " " wrist	5.34 "
15. Length of spine	18.68 "
16. " of arm and hand	22.53 "
17. " from shoulder to elbow	11.80 "
18. " from shoulder to wrist	10.80 "
19. " from ankle to knee	15.00 "
20. " from ankle to hip	30.33 "
21. " of foot	8.29 "

147 **High Temperature.**—The high bodily temperature may be an indication of the low vitality characteristic of the race. The cause is obscure, unless it is to be traced to their largely carbonaceous diet or to saturation with malaria producing a condition of masked fever. It has been observed that they do not feel themselves to be otherwise than quite well when the temperature is over 100° Fahr., and that that condition does not affect their appearance or actions.

Breathing.—In view of the experiments made in European countries and the United States as to the relative breathing of the sexes, it is of interest that the breathing of both sexes among the Andamanese is abdominal or upper abdominal, the women showing scarcely any indication of their breathing, though the men show it well.

In the healthy younger Andamanese the breath is sweet and there is no distinctive smell from the body when clean, though they perspire freely. The older people with decayed teeth and tissues, have foul smelling breath and bodies, partly due to a mild form of scurvy, caused by absence of vegetable food at certain times of the year.

145
582 **Age.**—The Andamanese male matures at about 15, attains full growth at about 18, and marries at about 26, he begins to "age" at about 40 and lives on

145
582 to about 60 to 65, if he reaches "old age." Except as to marriage at an earlier age, about 18, these figures apply fairly to the women also, who, however, live somewhat longer than the men, retaining in old age both health and mental faculties.

163
[853] **Reproduction.**—The marriages are infructuous, though barrenness is uncommon, a couple rarely producing families of even moderate size and many none at all. The child-bearing age is from 16 to 35; weaning is much delayed.

291
147 **Endurance.**—Left to themselves the Andamanese go stark naked and with head uncovered, except that the women wear, as clothing and not ornament, one or more leaves in front and a bunch of leaves tied round the waist behind, or a tassel of leaves all round. Jarawas, however, of both sexes have been seen entirely naked. They dislike and fear cold, but not heat, though they avoid exposure to the sun; and being accustomed to gratify every sensation as it arises, they endure thirst, hunger, want of sleep, fatigue and bodily discomfort badly. Want of sleep, such as occurs at their dances for occasionally as much as four days and nights, exhausts them greatly. A man's load is 40 lbs. and his distance 15 miles for a day or two only. After that he will rest, whatever the urgency.

252
262 **Food.**—The food consists of fish, pork, turtle, iguana, "wild cat" (*paradoxurus* sp.), shell-fish, turtle eggs, certain larvae, and a great variety of fruit, seeds, roots, and honey; and is plentiful both by sea and land. They never starve, though they are habitually heavy eaters. The food is always cooked and commonly eaten very hot. As much as possible of an animal is eaten and the Andamanese, like most hunters, have found out the dietary value of tripe. The Andamanese are expert cooks and adept at preparing delicacies from parts of animals and fish.

142 **Skin.**—The skin, which is smooth, greasy and satiny, varies in colour from an intense sheeny black to a reddish brown on the unexposed parts and also on the collar bones, cheeks and other prominences of the body. Its general appearance has been likened to a "black-leaded stove." The scalp, the lips and nostrils are black, and there are black patches on the palate. The soles of the feet are brownish yellow. The Bojigigiji Group (South Andaman) are the darkest, and among the Onges parts of the face are a light reddish-brown. The Jarawas are distinctly fairer than the rest, the general colour being a deep reddish brown. Leucoderma occurs on the fingers and lips.

[302]
[145] **Hair.**—The hair varies from a sooty black to dark and light brown, yellowish brown and red. The general appearance of it is sooty black or yellowish brown. Except on the head the hair is scanty, but not absent: on the head it grows in small rings, which give it the appearance of growing in tufts, though it is really closely and evenly distributed over the whole scalp. Limited baldness is unknown, but temporary general baldness after disease occurs with a weak growth of the hair afterwards. The hair is not shaved, except on the head and eyebrows, and each tribe has, with many fantastic individual variants, its own method of wearing it. It turns grey at about 40, but white hair is not common.

Shaving is "woman's work" and was performed by small flakes of quartz, but nowadays flakes from the kicks of glass bottles are substituted. It is effective and close, but a painful operation on an European's face, as I proved by personal experience many years ago.

Bodily Parts.—The mouth is large, the palate hard and highly arched, the lips well formed. The hands and feet are small and well made. The ears are small and well shaped, the eyes are generally dark to a very dark brown, bright, liquid and clear, but prominent with slightly elevated outer angles and become dulled with age. The teeth, in the young, except amongst the Onges, are white, good and on the whole free from disease. Those of the Onges are irregular and discoloured. As age advances the teeth generally lose their whiteness and become worn, but without much caries. The teeth are roughly used without any care whatever. Dentition is early.

164 **Diseases.**—The muscular strength of the Andamanese is great, but their vitality is nevertheless low, and the apparently robust quickly die after sickening

or severe injury. However, like many of the lower mammals, they recover quickly from illness when they overcome it. 164

Idiocy, insanity and natural deformities are rare among them. Epilepsy is however recognised and homicidal mania occurs sometimes with concomitants of insanity, such as eating raw flesh or earth and drinking the blood of the victim. 158 732

An unintentional artificial depression of the forehead and sides and top of the skull is produced in some women, chiefly among the Onges, caused by using a strap to carry loads on the back when young. [304]

No parts of the body are intentionally pierced, injured, or deformed for the wearing of ornaments and other purposes, though the skin is extensively tattooed.

The statements at my disposal as to the relative prevalence of diseases among the Andamanese and their relative fatality are unsatisfactory, but so far as I can make out the following is a fair statement of the case in order of importance: 164

I.—Fever	45 per cent. of all cases.
II.—Respiratory organs	35 " " "
III.—Digestive organs	15 " " "
IV.—Other diseases	2 " " "

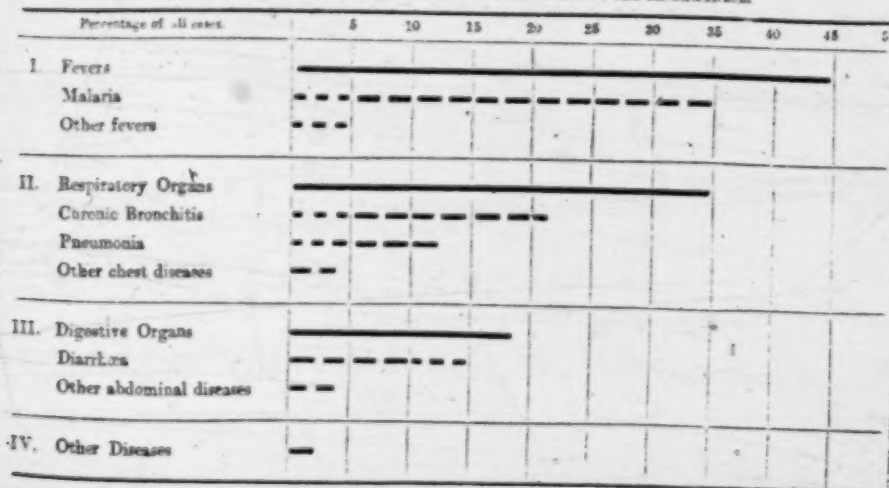
These classes may be further divided up more specifically thus:—

I.—Malaria	40 per cent. of all cases.
Other fevers	5 " " "
II.—Chronic bronchitis	21 " " "
Pneumonia	12 " " "
Other chest diseases	3 " " "
III.—Diarrhoea	15 " " "
Other abdominal diseases	3 " " "
IV.—Other diseases	1 " " "

Without placing too much reliance on the above table, it serves to bring out the fact that, among the Andamanese, as among the alien immigrants, malarial fevers are the overwhelming prevalent causes of sickness. As also in the case of immigrants, malarial fevers are not nearly so fatal in proportion to cases as the diseases of the respiratory and digestive organs. Thus I make out that deaths from malarial fevers occur in 8.5 per cent. of the cases, while those from diseases of the respiratory organs in 90 per cent., and of the digestive organs in 74 per cent. These considerations prepare us for the old statement that the prevalent diseases among the Andamanese are climatic and the same as those of the foreign immigrants.

The following diagram brings into clear relief the relative prevalence of diseases among the Andamanese as disclosed by the above tables:—

DIAGRAM OF RELATIVE PREVALENCE OF DISEASES AMONG THE ANDAMANESE.



164

Going a little further into detail, it has been noticed that malarial fevers are commonest in June, at the commencement of the monsoon and during heavy bursts of rain thereafter. Malarial fevers commence as usual in their intermittent form and prove fatal as remittent fever. Other zymotic fevers are uncommon, though the Andamanese will drink the filthiest water.

A short rainfall in the Andamans is usually accompanied by high dry winds and then is the high time of the chest diseases. But though the Andamanese are susceptible to bronchial catarrh, and though chronic bronchitis is common, it is not fatal; pneumonia is however extremely fatal. Pleurisy, hæmoptysis and phthisis are comparatively rare.

Abdominal diseases, though comparatively uncommon, are very fatal, diarrhoea, including probably dysentery, claiming most victims. Dyspepsia and colic are both common. In health the stools are regular, but inclined to looseness. They have been likened to those of the lower mammals when in good health.

[146]

Of other diseases sunstroke is dreaded and always fatal. The brain and spinal cord are not often affected, though curvature of the spine is occasionally seen. Scurvy occurs at the seasons when vegetable diet, i.e., such as fruits and roots afford, is too scanty. Elephantiasis occurs among the Onges, but is limited to the Little Andaman. Chronic muscular rheumatism occurs among the older people, leading to loss and withering of limbs. Ulcers, generally the result of wounds in the jungles, are common and, as with the immigrants, slow to heal. Abscesses are also common. Considering that personal uncleanliness is often extreme, skin diseases are curiously infrequent, except ringworm and exfoliated dermatitis, sometimes leading to destruction of finger and toe nails, due either to scurvy or exposure.

164

177

Excluding malaria, endemic disease has not been recognised among the Andamanese, and the only epidemics that have been known to attack them are imported pneumonia (1868), syphilis (1876), measles (1877), and influenza (1892), in that order: unhappily with disastrous effect. Exposure to the sun and wind in the cleared spaces, the excessive use of tobacco and over-clothing, as results of contact with civilisation, are also said to have undermined their health as a body of human beings. Intoxicants are forbidden to them by local rules and are not easily or commonly procured by them.

755

758

Medicine.—The diseases which the Andamanese distinguish by name are malarial fever, catarrh, coughs and rheumatism. Phthisis and heart disease are recognised, but are spirit caused and so are all internal maladies, which of course are not understood.

Medicine and surgery are almost absent from the Andamanese purview. They will bleed on the forehead for fever and headache and round abscesses to alleviate pain. They scarify for rheumatism and internal pain as a last resort. Red ochre and various herbal concoctions are both swallowed and applied as all-healers, in which they have great faith. Certain leaves are sometimes applied to local affections and beds made of them for the sake of their supposed medicinal odour. Cinctures, sometimes of human bones, are used to alleviate pain, but no other charms are employed. Occasionally the diet is slightly changed to relieve illness and they are quick to avail themselves of the hospital provided for them. They are extremely afraid of European surgery and will tremble violently at the sight of the operating knife. They smear themselves with white clay and water against the heat of the sun and with red ochre and oil after dark as a protection against cold.

[844]

The sick are sympathetically and very kindly, but superstitiously, treated. There are no pregnancy customs and those at childbirth are sensible and without superstition, difficult delivery being practically unknown.

Snakebite is uncommon and seldom fatal. Ligatures above the bite and scarifying are applied, both operations showing observation and common sense. Bites of centipedes, scorpions, leeches and ticks cause little inconvenience to the Andamanese, though very much to immigrants.

142

Appearance.—The figures of the men are muscular and well formed and generally pleasing; often a young man is distinctly good looking, for, though there is a tendency to prognathism, it is not commonly pronounced, while a straight and well formed nose and jaw, accompanied by superior intelligence

and an irritable temper indicating a nervous temperament, are by no means rare. 142
The natural good looks of many of the people are injured by the habit of shaving and smearing themselves with greasy red and white pigments.

The pleasing appearance of the men is not a characteristic of the women, 142
whose habits of completely shaving the head and profusely smearing themselves, 562
with an early tendency to stoutness and ungainliness of figure and sometimes to pronounced prognathism, frequently make them unattractive objects to Europeans. They are, however, bright and merry even into old age and are under no special social restrictions, have a good deal of influence, and in old age are often much respected. They nevertheless readily and naturally acquiesce in a position of subordination, slavery and drudgery to the men, and are apt to herd together in parties of their own sex. Variation from type is much commoner among the men than the women.

III. MENTAL CHARACTERISTICS.

Sense Development.—The nerve development of the Andamanese is low, 147
pain is not severely felt and wounds quickly heal. The sense development is 151
normal and instances of unusual acuteness observed are the result of personal training in certain directions and not of heredity, e.g., they will recognise one of themselves at a great distance, but not an unaccustomed object such as a European: they can smell a fire or hear the sound of dancing also at a great distance, but this is because they are always on the look-out for these things and their discernment is a matter of habit and of much consequence to themselves. They can, in short, do well such things as they pay particular or habitual attention to.

The Andamanese are naturally far sighted, and any near sight observed 151
will be found to be due to leucoma or other disease. In respect to sight, however, they are not more highly gifted than civilized mankind. The colour sense is hardly developed at all and they are what would be called in Europe colour-blind to most colours. Black, white and red are distinguished, but green and blue are not. This is due apparently to want of observation only, as they distinguish between white paint and the white European skin. A good deal of blindness was caused by imported epidemic ophthalmia in 1877. Hearing is not abnormally acute, but is highly trained in matters pertaining to jungle craft. Touch seems to be undeveloped. The sense of smell is highly developed in matters necessary to their existence, but they have no appreciation of artificial scent or of that of flowers which do not denote food, nor can they distinguish by smell that which they cannot see unless it be an object of food. Taste is strongly developed as to honey, distinguishing that deposited from different flowers. They care nothing for scenery and do not decorate themselves with flowers. [64]

Character.—In childhood the Andamanese are possessed of a bright intelligence, which, however, soon reaches its climax and the adult may be compared in this respect with the civilised child of ten or twelve. 181
He has never had any sort of agriculture, nor until the English taught him the use of dogs did he ever domesticate any kind of animal or bird, nor did he teach himself to turn turtle or to use hook and line in fishing. He cannot count and all his ideas are hazy, inaccurate and ill-defined. He has never developed unaided any idea of drawing or making a tally or record for any purpose, but he readily understands a sketch or plan when shown him. He soon becomes mentally tired and is apt to break down physically under mental training.

He retains throughout life the main characteristics of the child: of very short but strong memory, suspicious of but hospitable to strangers, ungrateful, imitative and watchful of his companions and neighbours, vain and under the spur of vanity industrious and persevering, teachable up to a quickly reached limit, fond of undefined games and practical jokes, too happy and careless to be affected in temperament by his superstitions, too careless indeed to store water even for a voyage, plucky but not courageous, reckless only from ignorance or inappreciation of danger, selfish but not without generosity, chivalry or a sense of honour, petulant, hasty of temper, entirely irresponsible and childish in action in his wrath and equally quick to forget, affectionate, lively in his movements and exceedingly taking in his moments of good temper. At these times the Andamanese are gentle and pleasant to each other, considerate to the aged, the

181 weakly or the helpless and to captives, kind to their wives and proud of their children, whom they often over-pet; but when angered cruel, jealous, treacherous and vindictive, and always unstable. They are bright and merry companions, talkative, inquisitive and restless, busy in their own pursuits, keen sportsmen and naturally independent, absorbed in the chase from sheer love of it and other physical occupations and not lustful, indecent or indecently abusive.

As the years advance they are apt to become intractable, masterful and quarrelsome. A people to like but not to trust. Exceedingly conservative and bound up in ancestral custom, not amenable to civilization, all the teaching of years bestowed on some of them having introduced no abstract ideas among the tribesmen, and changed no habit in practical matters affecting comfort, health, and mode of life. Irresponsibility is a characteristic, though instances of a keen sense of responsibility are not wanting. Several Andamanese can take charge of the steering of a large steam launch through dangerous channels, exercising then caution, daring and skill though not to an European extent, and the present dynamo-man of the electric lighting on Ross Island is an Andamanese, while the wire-man is a Nicobarese, both of whom exhibit the liveliest sense of their responsibilities, though a deep-rooted unconquerable fear of the dynamo and wires when at work. The Nicobarese shows, as is to be expected, the higher order of intellect. Another Andamanese was used by Portman for years as an accountant and kept his accounts in English accurately and well.

The intelligence of the women is good, though not as a rule equal to that of the men. In old age, however, they frequently exhibit a considerable mental capacity which is respected. Several women trained in a former local Mission orphanage from early childhood have shown much mental aptitude and capacity, the "savagery" in them however only dying down as they grew older. They can read and write well, understand and speak English correctly, have acquired European habits completely, and possess much shrewdness and common sense: one has herself taught her Andamanese husband, the dynamo-man above mentioned, to read and write English and induced him to join the Government House Press as a compositor. She writes a well expressed and correctly spelt letter in English, and has a shrewd notion of the value of money. Such women, when the instability of youth is past, make good "ayas," as their men-kind make good waiters at table.

The highest general type of intelligence yet noticed is in the Jarawa tribe.

805
823
821 **Mental Capacities.**—The Andamanese divide the day by the position of the sun and can roughly divide the night, though they have no idea of steering by the sun or stars. The year is known by the three main seasons of the climate and the months rudely by the flowering and fruiting of trees of economic value to them. Tides are understood and carefully noted, a necessary accomplishment to a people largely living on shell-fish and navigating shallow tidal creeks and shores. They are aware of the connection of the phases of the moon with the tides and have names for the four phases of each lunation. They know the four quarters of the compass in reference to the daily position of the sun and have names for the four chief winds that blow (N. W., N. E., S. E., S. W.). They differentiate three kinds of clouds:—Cumulus, stratus, nimbus. The only constellation they have distinguished is Orion and they have discovered the Milky Way for which they have a name, and also call it "the way of the angels" (*maroscin*, the daughter-messengers of Puluga).

576 **Social Emotions.**—The social emotions are not generally expressed. The Andamanese have no words for ordinary salutations, greeting or for expressing thanks. On meeting they stare at each other for a lengthened period in silence, which the younger breaks with a commonplace remark and then follows an eager telling of news, which an Andamanese always delights in hearing. Relatives however sit in each other's laps, huddled closely together at *meeting*, weeping loudly and demonstratively, and after a long separation this may last for hours. The Onges are less demonstrative and on such occasions shed a few silent tears only and caress each other with their hands. At *parting* they take each other by the hand and blow on it, exchanging sentences of conventional farewell.

Undemonstrative though they are, the Andamanese are readily roused to emotion, finding that difficulty in separating the real from the assumed observed

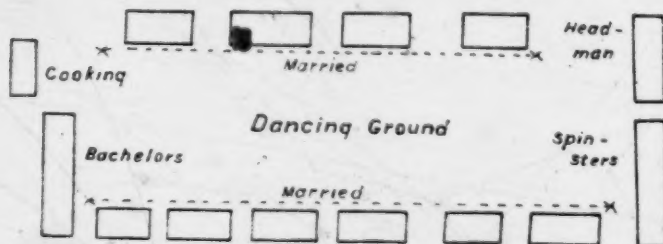
in other savages. At Government House, Calcutta, in 1895, when a party was told to sit down and weep to show the custom at meetings, in a few moments the weeping became genuine, and when after a short time they were told to stop and get up, tears were streaming down their faces. 576

General Capacities.—The Andamanese are good climbers, and rapid walkers and runners, moving with a free and independent gait, and can travel considerable distances at a time. The Jarawas turn their toes in, due to, the necessity of stooping to pass along their paths through the tangled jungle. The Eremtaga are good but not remarkable trackers. The Aryoto are good swimmers and are much at home in the water. The Andamanese generally show a dexterity in getting about their thick and tangled jungles which baffles all immigrants, though in this respect the Eremtaga quite out-distance the Aryoto, and the Jarawas apparently all the others. In the jungles all shooting with arrows is necessarily at very short distance, and generally the Andamanese are good shots at short distances only, judging direction very well but distance hardly at all. They can however at the very short distance required for shooting fish allow accurately for refraction in moving water and will shoot their fish successfully even in the surf in a manner that is inimitable: this is really due to accurate judgment of direction. 481

The Andamanese are unadventurous seamen, poling and paddling their canoes with small spade paddles at considerable speed, faster than that of an ordinary ship's boat for a little distance though they could not paddle away from one in even a short chase, but they never go out of sight of land, have never been even to the Coos (30 miles), nor to Narcondam and Barren Island, nor had they ever any knowledge of the existence of the Nicobars till our arrival. Man has a legend from Car Nicobar doubtfully going to show that the Onges from the Little Andaman once made raids on that island: but if this were true they would do so still. 502

IV. HABITS AND CUSTOMS.

Dwellings.—Except in the Little Andaman and among the Jarawas there are no fixed habitations, the search for easily obtained food and insanitary habits obliging the people to be nomads, for they have no practice of cultivation and domesticate no animal whatever except dogs obtained from the English. They thus dwell in various customary encampments, situate within their respective territories. At these encampments, usually fixed in sheltered spots, they erect about 14 temporary huts capable of holding up to 50 to 80 persons, arranged facing inwards on an oval plan always more or less irregular, thus— 621 [242] [231]



The central space is the dancing ground. A hut is merely a thatch about 4 feet long by 3 feet wide, sloping from 8 inches behind to 4½ feet in front, placed on four uprights and some cross-pieces without walls. In unsheltered spots and at the Head-Quarters of Septs large circular huts are built with a good deal of ingenuity, having eaves nearly touching the ground. These will be as much as 15 feet high and 30 feet in diameter. For hunting purposes mere thatched shelters are erected for protection from the wind. Close to every hut is a very small platform for surplus food about 18 inches from the ground, and in it at least one fire is carefully preserved. This is the one thing that the Andamanese are really careful about for they do not know how to make fire, though 342 [51] 372

372 they show much skill in so carrying smouldering logs with them by land or sea that they are not extinguished. Their ignorance of this fundamental requirement of civilization is shown in their fire-legend that fire was originally stolen from their deity Puluga and has never been allowed to become extinct since. Excepting guns, nothing has more impressed the Andamanese with European power and resources than the use of matches, i.e., of making fire whenever required with ease.

342 In the Little Andaman and among the Jarawas of the South Andaman, large permanent huts for use in the wet season are built up of solid materials to 30 feet in height and 60 in breadth to hold the fires of 7 to 8 hunting parties, say 60 to 70 people, i.e., they contain 7 to 8 fires with about 8 persons to each "fire." The Jarawa hunting camp is much the same as that of any other Andamanese and his great communal hut is built on the same principle as the larger huts of the other Andamanese.

The use of the flimsy hunting shelters and camp huts of the Andamanese is rendered possible in the wet and stormy weather so common in the Islands by the denseness of the jungle, which prevents the winds from reaching them even when close to the sea-beach and causes the rain to fall vertically upon them.

619 Government.—There is no idea of Government, but to each tribe and to
622 each sept of it there is a recognised head, who has attained that position by tacit agreement on account of some admitted superiority, mental or physical, and commands a limited respect and such obedience as the self interest of the other individual men of the tribe or sept dictates. There is a tendency to hereditary right in the natural selection of chiefs, but there is no social status that is not personally acquired. The social position of a chief's family follows that of the chief himself and admits of many privileges in the shape of tribal influence and immunity from drudgery. His wife is among women what he is among men and at his death, if a mother and not young, she retains his privileges. Age commands respect and the young are deferential to the elders. Offences, i.e., murder, theft, adultery, mischief, assault, are punished by the aggrieved party on his own account by injury to the body and property or by murder, without more active interference on the part of others than is consistent with their own safety, and without any fear of consequences except vengeance from the friends of the other side, and even this is usually avoided by disappearance till the short memory of the people has obliterated wrath.

421 Property is communal, as is all the land, and ideas as to individual possessions are but rudimentary, accompanied with an incipient tabu of the property belonging to a chief. An Andamanese will often readily part with ornaments to any one who asks for them. Theft, or the taking of property without leave, is only recognised as to things of absolute necessity, as arrows, pig's flesh, fire. 437 A very rude barter exists between tribes of the same group in regard to articles not locally obtainable or manufactured. This applies especially to cooking pots, which are made of a special clay found only in certain parts of the islands. The barter is really a gift of one article in expectation of another of assumed corresponding value in return, and a row if it is not forthcoming. The territory of other tribes is carefully respected without however there being any fixed boundaries.

562 The duties of men and women are clearly defined by custom, but not so as to make that of the women comparatively hard. The women have a tacitly acknowledged inferior position, but it is not such as to be marked or to leave them without influence.

771 Religion.—The religion is simple animism and consists of fear of the evil spirits of the wood, the sea, disease and ancestors, and of avoidance of acts traditionally displeasing to them, and this in spite of an abundance of mythological tales told in a confused, disjointed manner that is most instructive to the student of such things. There is neither ceremonial worship nor propitiation. There is an anthropomorphic deity, Puluga, the cause of all things, whom it is not, however, necessary to propitiate, though sins, i.e., acts displeasing to him, are avoided for fear of damage to the products of the jungle. Puluga dwells now in the sky, but used to live on the top of Saddle Peak, their highest mountain. The Andamanese have an idea that the "soul" will go under the earth by an aerial bridge after death, but there is no heaven nor hell nor any idea of a cor-

poreal resurrection in a religious sense. There is much active faith in dreams, which sometimes control subsequent conduct and in the utterances of "wise men," dreamers of prophetic dreams, gifted with second sight and power to communicate with spirits and to bring about good and bad fortune, who practise an embryonic magic and witchcraft to such personal profit by means of good things tabued to themselves as these people appreciate. There are no oaths, covenants and ordeals, nor any forms of appeal to supernatural powers. 771

Puluga, who is fundamentally with some definiteness identifiable with the storm (*Wuluga*) mixed up with ancestral chiefs, has so many attributes of the Deity that it is fair to translate the term by "God." He has a wife and a family of one son and many daughters. He transmits his orders through his son to his daughters, who are his messengers, the Morowin. He has no authority over the evil spirits and contents himself with pointing out offenders against himself to them. The two great evil, i.e., harmful, spirits are Erem-chauga of the Forest and Juruwin of the Sea. Like Puluga both have wives and families. The minor evil spirits are Nila and a numerous class, the Chol, who are practically spirits of disease. The Sun is the wife of the Moon and the Stars are their children dwelling near Puluga, but there is no trace of sun-worship, though they twang their bows and "chaff" the moon during an eclipse, and a solar eclipse frightens them, keeping them silent.

The Andamanese idea of the soul arises out of his reflection in water and not out of his shadow which follows him about. His reflection is his spirit, which goes after death to another jungle world, Chaitan, under the earth, which is flat and supported on an immense palm tree. There the spirit repeats the life here, visits the earth occasionally and has a distinct tendency to transmigration into other beings and creatures. Every child conceived has had a prior existence and the theory of metempsychosis appears in many other superstitions, notably in naming a second child after a previous dead one, because the spirit of the former babe has been transferred to the present one, and in their recognising of all Natives of India and the Far East as *changa*, or persons endowed with the spirits of their ancestors.

Superstitions.—The superstitions and mythology of the Andamanese are the direct outcome of their beliefs in relation to spirits. Thus, fire frightens Erem-chauga, so it is *always* carried. They avoid offending the Sun and the Moon by silence at their rise. Puluga shows himself in storm, and so they appease him by throwing explosive leaves on the fire, and deter him by burning beeswax, because he does not like the smell. Earthquakes are the sport of the ancestors. There are lucky and unlucky actions, but not many, and a few omens and charms. Animals and birds are credited with human capacities, e.g., convicts murdered by Jarawas have been found with heavy stones placed on them and stones have been found placed along their pathways. Every Andamanese knows that this is a warning to the birds not to tell the English that the men had been murdered and that the murderers had passed along the path in front.

Mythology.—The great bulk of the Andamanese mythology turns on Puluga and his doings with Tomo, the first ancestor, to whom and his wife he brought fire and taught all the arts and for whom he created everything. This line of belief is still alive and everything natural that is new is attributed to Puluga. Thus when the Andamanese were introduced to the volcano, Barren Island, on seeing the smoke from the top they at once christened it Molatar-chona, Smoke Island, and said the fire was Puluga's. 773

The next most important element in the mythology is in the story of the cataclysm, which engulfed the islands and was of course caused by Puluga. It separated the population and destroyed the fire, which was afterwards stolen by Luratur, the kingfisher, and restored to the people. The population previous to the cataclysm became the *changa* or ghostly ancestors.

Other stories relate in a fanciful way the origin of customs, e.g., tattooing and dancing, of the arts, articles of food, harmful spirits, and so on.

An important ethnological item in these stories is the constant presence of the ideas of metempsychosis and of metamorphosis into animals, fish, birds, stone and other objects in nature. Indeed the fauna chiefly known to the Andamanese are ancestors changed supernaturally into animals.

Initiatory Ceremonies.—There are rudimentary initiatory customs for both males and females, connected with arrival at puberty and marriageability 881

881 and pointing to a limited tabu. On reaching puberty or thereabouts, between 12 and 16 years of age, abstention from about 6 kinds of food, each in turn, is voluntarily commenced and continued for some years. At the end of each abstention there are a few ceremonies and some dancing and the youth of both sexes become "grown up." There is nothing else to mark this period beyond the application of an honorific name while it lasts, no secret to be communicated, no religious ceremony. In after-life, however, men who have gone through the initiatory period together will not fight, quarrel, nor call each other by name. They will assume great friendship, while avoiding each other with a mutual shyness. The women also practise a limited tabu as to food during menstruation and pregnancy. The idea of tabu does undoubtedly exist as to food and every man has his own tabued articles through life, which is, however, usually something observed to disagree with him in childhood or to be unpalatable.

264
576 There are also limitations as to sexual family relations. Only husband and wife can eat together. Widows and widowers, bachelors and maidens eat with their own sex only. A man may not address directly a married woman younger than himself or touch his wife's sister or the wife of a younger relative, and *vice versa*.

302
304 The tattooing is partly ceremonial, as a test of courage and endurance of pain, and so is painting the body with clays, oils, etc. By the material and design is shown sickness, sorrow or festivity and the unmarried condition.

535 **Amusements.**—The great amusement of the Andamanese, indeed their chief object in life after the chase, is the formal evening or night dance, a curious monotonous performance accompanied by drumming the feet rhythmically on a special sounding board, like a Crusader's shield and mistaken for a shield by several observers, singing a song more or less impromptu and of a compass limited to four semitones and the intermediate quarter tones, and clapping the hands on the thighs in unison. The dance takes place every evening whenever there are enough for it, and lasts for hours and all night at meetings of the tribes or septs for the purpose. It then becomes ceremonial and is continued for several nights in succession. Both sexes take allotted parts in it. This and turtle hunting are the only things which will keep the Andamanese awake all night long. There are five varieties of the dance among the tribes: that of the Ōnge-Jarawas being an entirely separate performance.

533 **Music.**—The Andamanese appreciate rhythm and time, but not pitch or tune. They sing in unison, but not in parts, and can neither sing in chorus nor repeat or even catch an air. The key in which a solo or chorus is started is quite accidental. They can be readily taught any dance step and can teach it themselves from observation.

Song.—Every man who respects himself is a composer of songs, always consisting of a solo and refrain, and sings without action or gesticulation and always to the same rhythm. The songs relate only to travel, sport and personal adventures, never to love, children and the usual objects of poetry, and very rarely to beliefs and superstition. The wording is enigmatic and excessively elliptic, the words themselves being in grammatical order, but shorn of all affixes as a rule. As in all poetry unusual words are employed. But clipped as the wording is and prosaic as the subjects are, the Andamanese are far from being unable to give a poetic turn to their phraseology and ideas. The women have lullabies for their babies.

524 **Games.**—The Andamanese are childishly fond of games and have an indigenous blind-man's-buff, leap-frog and hide-and-seek. Mock pig and turtle hunts, mock burials, and "ghost" hunts are favourite sports. Matches in swinging, swimming, throwing, skimming (ducks and drakes), shooting (archery), and wrestling are practised.

551 **Naming of Children and Adults.**—Every child is named for life after one of about twenty conventional names by the mother, of course without reference to sex, immediately upon pregnancy becoming evident, to which afterwards a nickname, varying occasionally as life proceeds, is added from personal peculiarities, deformities, disfigurements, or eccentricities and sometimes from flattery or reverence. Girls are also given "flower names" after one of sixteen selected trees which happen to be in flower at the time they reach puberty.

The "womb-name" is called the *teng-lar-ula* and on the child being born, the words distinguishing sex by the genitals, *ota*, male, and *kato*, female, are prefixed to it in babyhood. The women's "flower name" precedes the *teng-lar-ula* till motherhood or advancing years, but is often used alone. As the "flower names" are of much interest, the following list of them is given in the Beas language. There are eleven of them and flowers, regarded as identical by the Andamanese, belong to trees sometimes of quite different species: a mistake that is made by peoples of much higher mental development.

Flower name.	Tree.	Flowering month.
Moda	{ (1) <i>Semecarpus</i> (Sp.)	} March.
	(2) <i>Odina wodier</i>	
Ors	<i>Chickrasia tabularis</i>	March.
Jidga	{ (1) Unidentified	} April.
	(2) <i>Croton arayratius</i>	
Yeri	<i>Sterculia</i> (Sp.)	April.
Pataka	{ (1) <i>Meliorma simplicifolia</i>	} May.
	(2) <i>Terminalia procera</i>	
Beche	{ (1) <i>Eugenia</i> (Sp.)	} June.
	(2) <i>Rubiaceae</i>	
Chagara	<i>Pterocarpus dalbergioides</i>	August.
Charapa	Unidentified	September.
Chenra	<i>Leea sambucina</i>	October.
Yulu	{ (1) Unidentified	} November.
	(2) <i>Eugenia</i> (Sp.)	
Chilip	<i>Diospyros densiflora</i>	November, December, January and February.

The people are now ignorant of the origin of the flower names or of the cause of the selection of the trees above mentioned.

The honorifics *masia* and *mam* are prefixed out of respect to the name of elderly males and *chaso* to all names of married women. Girls are addressed by the flower name and the elders by the honorific. Names are not much used in addressing, but chiefly for naming the absent or in calling.

Marriage Relations.—The Andamanese are monogamous, and by preference, but not necessarily, exogamous as regards sept and endogamous as regards tribe or more strictly group. Divorce is rare and unknown after the birth of a child, unfaithfulness after marriage which entails the murder of both the guilty parties if practicable is not common, and polyandry, polygamy, bigamy and incest are unknown. Marriages are not religious, but are attended with distinct ceremonies. Marriage after death of one party or divorce is usual. Before marriage free intercourse between the sexes within the exogamous limits is the rule, though some conventional precautions are taken to prevent it.

Portman tersely describes the marriage ceremony thus—

"When the elders of a sept are aware that a young couple are anxious to marry, the bride is taken to a newly made hut and made to sit down in it. The bridegroom runs away into the jungle, but after some struggling and pretence at hesitation, is brought in by force and made to sit in the bride's lap. This is the whole ceremony. The newly married couple have little to say to and are very shy of each other for at least a month after marriage, when they gradually settle down together."

Marriages are the business of parents or guardians and they have a right of betrothal of children, the betrothal being regarded as a marriage. Marital relations are somewhat complicated and quite as strictly observed as among civilised communities. Old books on this point generally ascribe bestiality and promiscuity to the race, but quite wrongly.

Death Ceremonies.—Deaths occasion loud lamentation from all connected with the deceased. Babies are buried under the floor of their parents' hut. Adults are either buried in a shallow grave, or, as an honour, tied up in a bundle and placed on a platform in a tree. Wreaths of cane leaves are then fastened conspicuously round the encampment, and it is deserted for about three months. Burial spots are also sufficiently well marked. Mourning is observed by smearing the head with grey clay and refraining from dancing for the above period. After some months the bones of the deceased are washed, broken up and made into ornaments, to which great importance is attached, as mementos of the deceased and as they are believed to stop pain and cure diseases by simple application to the diseased part. The skull is worn down the back tied round the

765 neck, usually, but not always, by the widow, widower or nearest relative. Mourning closes with a ceremonial dance and the removal of the clay. The ceremonies connected with the disposal of the dead are conventional, reverential and by no means without elaboration in detail.

V. ARTS.

324 **Stone Implements.**—The only stone cutting implement known to the Andamanese is the quartz flake chipped off, never worked, and held between the fingers for shaving and tattooing, and shells and fish bones are used for the small blades of the peculiar adze of this people, and for arrow points, scraping and cutting. A *cyrena* valve is the ordinary knife and scraper. Hammers, anvils, hoes, and oven-stones consist of natural stones. They have never made celts.

177 The ends of glass bottles for some years, and iron from wrecks for a long time past, have been substituted for the indigenous implements, when and where procurable. The object of the long series of murderous raids made by the inland Jarawas on the outlying parts of the Penal Settlement has now been proved to have been made in search for iron. The implements on the whole are coarsely and roughly made.

411 **Weapons.**—The weapons of the Andamanese are bow and arrow, harpoon, fish spear, pig spear, and they have never had any notion of poisoning the blades, which however sometimes inflict dangerous septic wounds from dirt, though as a rule they are kept bright as a matter of pride. Barbed arrows and harpoons with loose heads are used for catching and pulling up game in the jungles and marking where turtle or large fish are sinking.

Domestic Arts.—Excellent information with illustrations on the domestic and other arts of the Andamanese is to be found in a minutely accurate work, Man's *Aboriginal Inhabitants of the Andaman Islands*.

283 **String and Netting.**—String for nets and all purposes is twisted, often neatly, from the inner bark of creepers. Large nets of this string are made for driving turtle and hand-nets for prawns and small fish and for wallets. Stout cord is made from the inner bark of the *melochia velutina*. Whole, split and scraped canes are used as binders.

285 **Weaving.**—The weaving is good, neat and stout, and baskets and mats are thus well made from strips of canes.

323 **Pottery.**—The unglazed circular clay cooking pots with rounded or pointed bottoms, to the Andamanese very valuable, are built up by hand, sundried and then baked, but not thoroughly, in the fire. They are often encased in basket work for safety. Their manufacture, form and ornament are typical of the Stone Age generally.

322 **Wood and Cane work.**—Buckets are hollowed out of wood or cut from the joints of the bamboo. Canoes are hollowed out of whole trunks of light, soft timber by the adze without the use of fire, do not last long and are only fair sea boats. They are however capable of holding many people and a good deal of light cargo.

301 **Ornamentation, Personal and Domestic.**—The personal ornaments made are—bunches and strips of fibres and leaves scraped, cut and hammered, fringes of dentalium shells and straw-coloured wreaths of hammered and roasted dendrobium bark. The bones, skulls and jawbones of deceased relatives are also used whole, or broken and scraped to fancy or requirement, as ornaments, besides necklaces of the bones of animals. Tattooing and painting the body are only ornamental to the extent that, in the latter case especially, deviations from the conventional designs are due to personal taste.

353 The only ornaments to dwellings and huts are the heads of turtle, pigs, iguana, *paradoxurus* killed in hunting. These are hung up partly as ornaments and partly as trophies, but not with any idea of record.

331 Every manufactured article has its own customary conventional line ornament in one or more of three colours and in one or more of eleven patterns approximately achieved only. The colours are red, white and brown from natural earths. The patterns are (1) chevrons, (2) close cross hatch, (3) wide cross hatch, (4) parallel lines, (5) parallels and chevrons combined, (6) lozenges, (7) plait or guilloche, (8) herring-bone, (9) cross cuts, (10) loops, (11) vandyke with scalloped bands and cross lines.

APPENDIX A.

POINTS OF AGREEMENT AND DIFFERENCE BETWEEN THE ANDAMANESE AND THE SEMANGS.

The Semangs are found in Northern Perak, Kedah, Kelantan, Trengganu, and Northern Pahang in the Malay Peninsula. They have come considerably under outside influence and especially under that of the wavy-haired (Sakai) and the long-haired (Jakun, wild Malay) tribes of the Peninsula and even of the civilised Malays themselves.

Points of Agreement of Semang with Andamanese.

- Hair: In colour and growth.
- Height: Men 57 to 58 inches, women 53½ to 54½ inches.
- Skin: In texture and colour.
- Shape of head: Mesaticephalic and brachycephalic.
- Eyes: In colour and shape.
- Food: In its nature and elaborate preparation.
- Huts: In leaf shelters; with the Ōnge-Jarawas, in communal huts, though not so good.
- Funerals: In ceremonies and probable former disinterment of bones.
- Belief: In the bridge to Paradise.
- Bows: With the Ōnge-Jarawas only.

Points of Difference between Semangs and Andamanese.

- Face: In the great variation of the Andamanese face.
- Implements: In the blow-gun and poisoned arrows and spears.
- Hunting: In trapping game.
- Feeding: Men before women.
- Quivers: In having reed quivers; Andamanese stick their arrows in the waist belt.
- Ornamentation: In quality and artistic merit.
- Ornaments: In personal ornaments, and in piercing the nose.
- Huts: In rock-shelters, cave dwellings, tree huts, barricaded huts.
- Clothing: Of hammered barks; loin-cloth for men, petticoat for women.
- Magic: In its practice and in use of magical designs.
- Music: In nose-pipe and bamboo castanets.
- Songs: In their nature.
- Marriage: Based on purchase and in ceremonies.
- Beliefs: In Shamanism, metamorphism into tigers of living men, in ideas as to "God."
- Language: In its mixture with Malay and Mon; basis can be proved *perhaps* to be (P Ōnge-Jarawa) Andamanese, though the specimens I have seen afford very little hope of this.

Also a portion of the Semangs have fixed habitations and a rude agriculture, this latter capacity being entirely absent in the Andamanese.

APPENDIX B.

JARAWA RAIDS ON THE SETTLEMENT.

- 177
721
- 1872. Convicts robbed of tools and clothes between Aberdeen and McPherson's Strait.
 - 1875. Four convicts killed on Kyd Island. [One convict killed and 2 captured (all runaways) at Lekerajoinga by the Beas for stealing their canoe.]
 - 1878. Attack on Brigade Creek Andamanese Home: 1 man killed.
 - 1880. Camp of friendly Andamanese attacked at Port Campbell.
 - 1882. Andamanese skirmish with Jarawas at Goplakabang, but friendly signs at Kalatang.
 - 1883. Five convicts killed at Ranguchang: 1 Jarawa woman captured.
 - 1884. A Police Constable wounded at Maillitilek: 1 Jarawa killed, 2 captured (1 wounded). Birds'-nest boat attacked at Ranguchang: 4 Jarawa women, 1 man (Habiyo) captured and released. Jarawa huts found in the Jarawa Khari Valley.
 - 1885. Two convicts murdered at Ograbaraij: 2 Jarawa women captured and released.
 - 1887. Andamanese camp at Chanal (N.-W. corner of South Andaman) attacked, 1 boy wounded.
 - 1888. One convict killed and 1 escaped at Tusonabad and 1 killed at Mattra: 1 run-away killed: convict boat attacked at Tytler's Ghat in Port Mout.
 - 1889. Andamanese camp at Port Mout attacked, 1 man wounded.
 - 1890. Andamanese camp at Port Campbell attacked, 1 man wounded. One Jarawa child captured. Andamanese attacked at Motkunu in the Middle Strait. Three convicts attacked at Cadellganj, 1 killed, 1 wounded. Two Jarawas killed at Talalunta.
 - 1891. One convict at Bindraban wounded.
 - 1892. Andamanese camp at Bajajag attacked: 1 girl killed.
 - 1893. Andamanese camp near Homfray's Strait attacked: 1 man killed, 1 wounded.
 - 1894. An Andamanese, turtle hunting, was killed at Port Mout.
 - 1895. Two convicts killed at Cadellganj. Two Rutland Island Jarawas captured and released.
 - 1896. One Jarawa wounded by an Andamanese at Bluff Island (Port Anson). Attack on Andamanese Camp at Goplakabang. Jarawa communal hut discovered at Constance Bay.
 - 1897. One convict killed at the Tarachang Home. Jarawa village found on Torabi Hill, Port Campbell: 3 Jarawas and 1 woman wounded. Three convicts at Cadellganj killed.
 - 1898. Ration boat in Shoal Bay attacked at Jirkatang: 1 convict and 1 police constable wounded.
 - 1899. Jirkatang temporary convict barrack attacked: 2 convicts wounded: 1 Jarawa wounded: 1 friendly Andamanese wounded.
 - 1901. Three convicts killed: 2 wounded at Cadellganj and Jatang.
 - 1902. Two convicts killed at Jatang: 1 Jarawa child captured at Talalunta and 2 women, 2 children and 2 boys captured at Wibtang. Mr. Vaux killed at Wibtang.

APPENDIX C.

PAPERS CONNECTED WITH PROCEEDINGS IN RELATION TO THE
JARAWAS IN 1902.

These papers contain the only valuable record of proceedings in connection with the Jarawas and their country that exists. 000

They show the difficulties and dangers that attend those who venture into the interior of the Andamans.

I.

PORT BLAIR, THE 26TH FEBRUARY 1902.

The Chief Commissioner announces with the greatest regret the death of Mr. Percy Vaux, Seventh Assistant Superintendent, who was killed by the Jarawa Tribe on the night of the 24th February 1902. The Commission loses in him a most promising officer.

The distressing circumstances under which this officer suddenly lost his life renders his loss all the more deplorable. He was killed during a struggle with the hostile tribe of the Jarawas just as he was about to complete what had otherwise been a most successful series of operations, in which he had exhibited much courage, endurance and skill. The circumstances which caused his death are as follows:—

The marauding parties of Jarawas that almost every cold season make raids on the outskirts of the Penal Settlement, this season, in November 1901 and January 1902, raided the Forest Department gangs working at Jatang, about 25 miles north of Port Blair, killing and wounding convicts at their work. A party was organised in consequence to try and discover their haunts in the jungles and to put a stop to further raiding, but on a somewhat larger scale than usual, as the two last raids appeared to be more purposeful than hitherto.

The officials detailed for the duty were Mr. Percy Vaux, Officer in charge of the Andamanese with Mr. Bonig, Assistant Harbour Master, and Mr. C. G. Rogers, Deputy Conservator of Forests. Men from the Andaman Military Police Force and picked Andamanese trackers accompanied them.

Mr. Vaux proceeded up the West Coast of the South Andaman on 25th January 1902 and was successful in the very difficult operation of discovering the camps and paths of the Jarawas in the hills above Bilap Bay, about 8 miles north of Port Campbell. He then on the advice of the Andamanese with him proceeded northwards to Port Anson and thence to Pochang in the South Andaman at the southern extremity of that harbour. Here, with much skill and difficulty he discovered the main Jarawa track running southwards from the harbour, and also the chief place of residence of the Jarawas during the rains. Having accomplished this, Mr. Vaux returned to Port Blair and brought with him a much fuller report upon this practically unknown tribe than had hitherto been made. Mr. Rogers meanwhile was endeavouring to work his way direct from Jatang on the east across the South Andaman to Ike Bay on the West Coast, right athwart the country believed to be occupied by the Jarawas.

Mr. Vaux was then directed to join with Mr. Rogers and make further investigations at Pochang, and after ascertaining that the main Jarawa path led southwards beyond Pochang indefinitely, the party returned to Port Blair. This expedition accomplished part of the objects aimed at, in that it showed where the Jarawas started from on their raids and proved that the object of their unprovoked murderous attacks on parties from the Settlement working in the jungles was to procure iron and iron implements, and not to procure water and food as hitherto supposed.

On 17th February 1902, the party was reorganised thus:—Mr. Vaux with Mr. Bonig, 12 Police and Andamanese; Mr. Rogers accompanying them. The general object was to discover the southern termination of the main Jarawa path and to drive the Jarawa marauders northwards along it and away from the neighbourhood of the Settlement. The party started as before along the West Coast and, on the advice of the Andamanese, searched the jungles about Island Bay, some 10 miles north and north-east respectively of the outlying villages of Templeganj and Anikhet. This was a task of much difficulty, and in the course of the search, in three parties under Messrs. Vaux, Rogers and Bonig, Mr. Vaux came in the evening upon a hunting camp of the Jarawas. Judging from its position and distance from the chief home of the tribe at Pochang, he inferred that the party's real object was a raid on the Settlement villages. He successfully rushed the camp by moonlight and discovered, among other things, a large new Forest Department adze, which had been taken from a convict wounded in the Jarawa attack on Jatang in November 1901. This confirmed him in his suspicions as to the reason of the hunting party's presence so close to the Settlement. None of Mr. Vaux's party was hurt in this attack, the Jarawas being too startled to shoot.

In their flight the Jarawas left in the camp a baby and a small girl. This circumstance, and also the advice of the Andamanese as to further proceedings, determined Mr. Vaux to proceed to Port Anson, to the Andamanese Home there, where the children could

000 be taken care of. Adopting generally the advice of the Andamanese, Mr. Vaux then proceeded again to Pochang and followed the main Jarawa track southwards steadily, which proved, beyond Pochang, to be an exceedingly difficult affair. The party proceeded about 15 miles march beyond Pochang in a south-east direction to Wibtang, a point about 6 miles west of Port Meadows and some 18 miles from Jatang: thus showing that the chief Jarawa haunt is the jungle between the mouth of Shoal Bay and Port Anson. At Wibtang an occupied hunting camp was found to block the way, further and Mr. Vaux judged it necessary to rush this camp at night as he had the previous one. For this purpose he selected one Police Constable and 10 Andamanese; and there were besides these himself, Mr. Rogers and Mr. Bonig, and three servants: altogether 23 men.

The camp was rushed about 10 p.m. on the night of the 24th February after the moon had risen. Mr. Vaux went in first, followed by Messrs. Rogers and Bonig, the Andamanese coming up immediately behind. There was no real resistance, but as Mr. Vaux was stooping down in a hut grappling with two Jarawas, his foot disturbed the smouldering embers of a fire, which blazed up, exposing him to the view of a man in another hut, who shot two arrows at him, and decamped. These were the only two arrows shot in the affair, but one of them, a barbed iron-headed arrow, entered Mr. Vaux on the left side between the ninth and tenth ribs with great force, killing him almost immediately. Next morning, as soon as it was possible to see, Mr. Rogers carried back the body with many difficulties through the jungles to Pochang and Port Anson, reaching that harbour in the evening, whence the body was conveyed in the steam launch *Belle* through Middle Strait to Port Blair arriving about midnight on the 25th February. Two women and six children were found in the camp after the attack, who accompanied Mr. Rogers' party to Port Anson and onwards quite cheerfully, and it has been ascertained that the children found in the first camp rushed are closely related to one of these women. European iron implements were found in this camp also. These facts prove that the men in both camps were of the parties which actually attacked the Forest Department convicts at Jatang in November. A number of implements of offence were found in both camps and have been removed. In fact these particular bodies of marauders have been deprived of means of offence for some time to come.

Mr. Rogers deserves the greatest credit for his rapid march back through the jungles, during which one of his party was slightly wounded by a couple of Jarawas, who however decamped on being fired on. So also does Mr. Bonig for his skilful management of the steam launch *Belle* through so narrow a passage as Middle Strait at night. The conduct of the Police on the return march was exemplary.

The object then of the operations which Mr. Vaux, with the assistance of Mr. Rogers and Mr. Bonig, conducted with such conspicuous endurance, courage, and skill has been entirely carried out. Precise information has been obtained of the location of the Jarawas, of the real object of their annual raids, of the best mode of reaching them, and they have been taught that they cannot raid and murder with impunity. The return of the captured women will teach the tribe something of ourselves and that we have the power, if we choose, to take their families away from them. Thanks also to the energy and determination of Messrs. Vaux and Rogers, much knowledge of the nature of the country and forests in the hitherto untouched interior of the South Andaman has been gained, and it is very satisfactory to note that the parties of Jarawas punished belonged to the actual perpetrators of the latest raids. No operations in relation to the Jarawas have hitherto been anything like so successful. It is therefore all the more to be deplored that the leader should have lost his life in the chances of a struggle. It is a still more regrettable circumstance to record that the life need not have been lost, for at the last moment Mr. Vaux made an error in judgment in not waiting as usual for the Andamanese to rush into the camp first. Had this been done, it is more than probable that no life would have been lost. But it has been ascertained that he feared that if he did so the Andamanese accompanying him would kill all the men they could and that the rest would escape with most of their weapons and stolen property. It was to avoid this that he determined to go before them when the word was given to attack, and thus he lost his life in a laudable, though mistaken, attempt to save bloodshed.

II.

EXTRACTS FROM REPORTS AND DIARIES OF TWO RECONNAISSANCES OF THE COUNTRY SUPPOSED TO BE OCCUPIED BY THE JARAWAS.

First Reconnaissance.

Extract from the Report, dated 8th February 1902, from the late Mr. P. Vaux, Officer in charge, Andamanese, Port Blair, from 25th January to 4th February, 1902.

25th January.—Left Port Blair at 6-30 p.m., in the steam launch *Belle* with Mr. Bonig, Assistant Harbour Master, a Havildar and 6 Constables of the Port Blair Police and a party of 15 Andamanese. Reached Macpherson's Strait at 9 p.m., and anchored for the night.

26th January.—Weighed anchor at 9 a.m., the delay being due to our giving the Police and Andamanese a run on shore. Proceeded on to Port Mount to take on an Andamanese canoe. Left as soon as possible and proceeded to Constance Bay. We landed

here and found some self-supporters from Templeganj. One of these men told me a story about some of his villagers being attacked by Jarawas two days before, and I thought it worth while to send for the Chaudhri and the villagers. On their arrival they all denied having ever seen anything of the Jarawas and denied having spread any such report. There seemed to be no truth whatever in the story; so I sent them all back. Anchored here for the night.

27th January.—Started from Constance Bay at 7 A.M., and arrived at Port Campbell at 11 A.M. I sent a party of Andamanese and Police into the jungle to the south, to try and pick up traces of the Jarawas. I and Mr. Bonig searched with others along the shore but found no recent traces. Mr. Bonig picked up an old bow and a basket. It seems probable that the Jarawas have not camped here since the man was shot by the Census party last year. The Police and Andamanese returned in the evening without having found anything. The Janglis had a grand turtle hunt in the evening, shooting some dozen turtles and a small pig, the latter a splendid running shot by quite a young boy. There was so much excitement over the turtle hunt, that those on the launch thought we were being attacked, and the remaining Police and Andamanese came hastening off, including the women, the latter with piles of arrows.

28th January.—Up to to-day we had done nothing, but from to-day the real business began. Mr. Bonig and I each took a party and we began a systematic beat of the jungle. We arranged for Mr. Bonig to examine the coast to the north and the adjoining jungle, while I beat the jungle in the interior. My party consisted of 5 Andamanese and 3 policemen, Mr. Bonig taking the remaining Andamanese and Police, except a guard of two of the latter who were left on board. I rowed off in the dinghy at 8 A.M., and landed on the northern shore of Port Campbell opposite the southern extremity of Clyde Island. Here we searched in the dense jungle about the swamps and hills, and came upon the footsteps of Jarawas, some old and some fairly recent. About 10 o'clock we came on the first traces of a Jarawa. There was only one man, and he was evidently hunting, but after following his tracks for a considerable distance we gave it up, as he was obviously after game, and his tracks led nowhere. It was not until midday that we came upon a Jarawa camp. Amid considerable excitement we surrounded it, only to find it empty. Our Andamanese at once seated themselves in the huts, and lit their pipes. This I discovered afterwards was their universal procedure. It was a five-hut camp—three large huts in the middle and one at each side, at a little distance; these latter our Janglis explained were for look-outs, where only men slept. The Andamanese said it had not been occupied since the rains. It was substantially built, with stout *ballis*, and was well thatched. A string of pig skulls was hanging from the roof, besides this an old basket and an arrow was all we could find. The Andamanese told me the Jarawas would use it again next rains. The huts were on slightly rising ground alongside a fresh water stream. We waded up the stream between 2 and 3 miles, sometimes waist deep, and frequently knee deep. It was here that it first struck me, that the theory of the Jarawa raids being due to scarcity of water was unfounded, and of this, as will be seen, I had plenty of confirmation before returning to Port Blair. In the course of the day we came on several water holes and springs. When not walking along the course of the stream, we were literally wriggling through the dense jungle up and down hill. We got out on the coast again about 4 P.M., and reached the boat about half an hour later. We had been walking from 8 A.M. to 4 P.M., with perhaps one hour's rest, certainly not more, taken in intervals of about 10 minutes at a time. Yet I doubt whether we covered more than 15 miles. But no walking in the world could be more fatiguing, as we were bent double creeping through the dense jungle, every shrub of which seemed to bear a thorn. We then had a two-hours' pull back to the launch, as by this time it was quite low-tide and there was shoal water all around. We reached the launch at 6-30 P.M., Mr. Bonig and his party returning only a few minutes earlier. He reported having come on fresh Jarawa footsteps on the sea shore, at a Bay called Beliep, in Andamanese, north of Ike Bay. He also reported finding three anchors and a quantity of iron kentledge on the sea-shore close to Bilep, evidently from the wreck of a barque. I do not know whether this has been reported before. The wreck, he informs me, must have been quite an old one.

29th January.—As the traces of the Jarawas all seemed to be to the north of where we were, we left Port Campbell at daylight and anchored at Bilep at 7 A.M. Here we again divided into two parties, mine consisting of 7 Andamanese and the policemen, and Mr. Bonig's of similar numbers. Two policemen were left on board, one of whom, however, had fever. This constable was ill from start to finish and never landed at all. I rowed up a creek in the dinghy a little to the south of Bilep Bay, Mr. Bonig going up another creek in his boat which flows into the Bay. The creek I went up is called Gering-chapa-jig by the Andamanese; it was a fine broad piece of water quite as big as Brigade Creek. We were now in the heart of Jarawa country and every precaution was observed. The dinghy was rowed for, I suppose, a little over a mile up the creek. On either bank, signs of Jarawas were visible in the shape of felled saplings and leaves. At every bend in the creek the Andamanese drew their bows and fitted in their arrows, and at the least sound in the jungle they stood up in the boat with full drawn bows, as it was possible to have an arrow into the boat any minute. However, nothing happened, and soon the creek got too shallow for the boat, and we hauled it up high and dry, and tethered it to a tree. We then all proceeded up the river bed in the same order as yesterday, an advance party of Andamanese, then myself and the Police, and another party of

000

Andamanese in the rear. We soon came upon the track of Jarawas. First of a man, then of a man and woman, and then also of a child, all proceeding up the gorge. The river, or mountain stream, was of a most difficult nature to climb. It was very deep in parts, and most of the time at the commencement we were knee deep, often waist deep, and once when I slipped into a pool I had to swim. Similar accidents befell the Police, and these experiences have altogether dispelled the water theory of Jarawa raids as far as I am concerned. At times we reached almost insurmountable walls of rocks, which we had the greatest difficulty to get over. Sometimes I had to be hauled up the slippery rocks by the Andamanese, at other times we crawled through water-channels underneath them, and at others we were creeping through the leech-infested jungle on either side slowly working our way up the channel. The higher we got up, the more tracks were visible and we were evidently on a Jarawa highway, as men's, women's and children's footsteps could be seen ascending and descending. At about 1 p.m. we were evidently near an encampment. Trees were arranged as bridges over some of the boulders and pools and a beaten track was found on the side of the jungle where the river bed was impassable. Saplings were seen cut on every side and in one place a cold fire and a few shells were found. At last we got to level ground where the boulders ceased and the mountain torrent became a stream. We waded through deepish water for a fairly long distance. It was very cold as the sun could not penetrate the dense jungle. As the signs of Jarawas increased so did our excitement. At last about 2 p.m., the Andamanese seemed nonplussed, but after searching here and there went up a beaten track without hesitation, which ascended a hill, and there was the Jarawa camp. We approached it with the utmost caution, only to find it empty. It was a six-hut camp, arranged with the usual two look-out huts at the sides; it had been left about a week, and there were only pig skulls and an old basket in it. After a short rest we turned home-wards down at Jarawa path. These paths are quite clear, branches and saplings being felled on either side, and except that they are made for small people are quite as good as dacoit paths in Burma. Thinking all was over we proceeded quite carelessly, when suddenly the Andamanese spread themselves out with every sign of excitement and a column of smoke could be discerned and afterwards huts. With the utmost caution again we approached and again found the huts empty. The occupants could only have left six hours before at earliest. The logs were smouldering, boiled prawn heads were strewn about, water vessels made of leaves with water in them were in the huts, and everything betokened recent habitation. But no cooking pots or bows were in the huts, some baskets, arrows, and a child's bow were all that we could find. The Andamanese were doubtful whether the Jarawas would return, saying no property of value had been left. Still I determined to wait and we lay in ambush round the camp. This was an eight-hut camp, and built just as the others were. After about half an hour there was a distinct cry from the direction of the camp we had previously visited, another cry followed, and afterwards two fainter ones. I believe myself our visit to the first camp had been discovered, and the cries were cries of warning. At about 3-30 p.m. the Andamanese said the Jarawas would not return and that we must get back. This I did not altogether believe, but after much consideration I concluded that there was nothing else to be done. We had many weary miles to travel through cold water, and break-neck boulders, and leech-infested jungle. So with the greatest reluctance, I gave the order to turn homewards by a Jarawa track, which led into a small stream which in its turn flowed into the big mountain stream of our morning's ascent. We hurried down the river bed, floundering over the rocks, falling up to our necks in the pools, and jumping and tumbling down the semi-precipitous track. In such haste were we that even the Janglis occasionally stumbled and fell. In spite of all our haste, night was soon upon us. It was dark at 4, so thick was the jungle on the banks of the stream, and from 6 to 7 we staggered along in what had become pitch darkness. It is difficult to say which was the worst, stumbling and falling over the steep, slippery rocks, or forcing one's way in the black darkness through the pathless, thorny jungle. It is a mercy that no serious accident occurred. At 7 o'clock I thought it hopeless to go any further, and though no one had eaten anything since leaving the launch I thought it better to camp where we were. But the Andamanese said they would manage it. They had now found a clump of bamboos, and cutting these they splintered them with stones, and set them on fire. Thus each holding a torch we completed the last few miles to the boat, over the rocks, through deep water and under and through the jungle. It was as rough work as one can well imagine, but infinitely better than the horrible half hour of inky darkness that had preceded it. At last at well past 8 we reached the boat. The tide was out and we had great difficulty in launching it and getting it over the first quarter of a mile. Then we got into deep water, pulled out of the creek, and finally reached the launch at 9-30. We had been absent 13½ hours, and must have been wading, climbing and stumbling at least eleven of them. We must have gone well over 20 miles. The Police with me again behaved excellently, though they were nearly done up: so was I, and even the Andamanese, though still full of laughter and cheerfulness, admitted they were very tired. Mr. Bonig was waiting on board, but his report was very disappointing. After hours of jungle work, he had come on the track of four or five Jarawas crossed into my river bed, followed them a long way down it, then through the jungle and out on to the sea coast near the launch. There he discovered that they had not only escaped, but that they had looted his boat, taking two of the four rowlocks (thoughtfully leaving him two to pull the boat back with, the only considerate thing I have ever heard of Jarawas doing), an old knife belonging to an Andamanese boy, and the bucket, and then gone off into the jungle. They had sat under a tree looking at the launch for an hour-and-a-half, within full view of

those on board. There were two policemen on board. There were also an Andamanese boy Henry, who was lame, through having fallen on the rocks two days previously, three Andamanese women, the whole of the crew, free and convict, and a lame convict *mullah*. Out of all these people none had the sense to get the Andamanese canoe along-side, get it manned and row over and approach the Jarawa. The rest of us had done all we possibly could to come up with Jarawas and here they were in sight of over a dozen men waiting to be approached, and were allowed to remain and to leave unmolested. After the hardships we had been through, this piece of news was really too discouraging. I may as well add here what had really happened, though this we did not discover until a careful examination of the tracks the following day. A party of two or three men, a woman, and a child had left the last huts I had visited early in the morning. Proceeding by a Jarawa track, to the river bed, their high-way to the sea, they had come on the tracks of my party and followed them down to see who we were, and where we had come from. Having arrived at nearly the bottom of the river they broke off through the jungle in order to avoid the deep water, and came out on the coast, thus missing my boat. Here they found the launch, and after watching it for an hour and-a-half, and finding themselves unmolested, they had strolled off and found their way to Mr. Bonig's boat. Having looted this they returned, either to the huts from which they came, or to some others near by. While they were following my tracks Mr. Bonig and his party had come on theirs, and were hurrying after them as fast as possible, arriving an hour too late, and it was then too late to hunt them further so they had had the narrowest escape. I had been an hour or so too early for them, Mr. Bonig a bare hour too late, while the people on the launch had had them in view for a whole hour and more and had done nothing.

500

30th January.—To-day was a day of comparative rest. As our efforts to come across the Jarawas in the jungle had all been fruitless, we tried to tempt them to attack us. For this purpose the Andamanese were ordered to bathe and play about on the beach, the three women we had with us being landed with the rest. Only two policemen, Mr. Bonig and myself landed and strolled about in an unconcerned manner. But all to no purpose. The wily savages, either from fright or some other reason, declined to oblige us. The Andamanese said that finding so many people about, they had gone to give intelligence to the remainder of the tribe. However that may be, we could see no signs of them and at half past one after frequent blowing of the whistle we left, Mr. Bonig took the steam launch up to Kaichwa Bay, while I marched up the coast. I found an old shelter on the shore close to Port Campbell, and after that the whole way up the coast the only sign I could find of them was an old piece of wreckage with nails in it, out of which the Jarawas had evidently removed several nails. After the last two days' operations the journey was quite an easy march of 8 miles or so along the beach. On arrival I found Mr. Bonig had taken a party in to search the jungle. He returned at 6 P.M. having found no signs of any one.

31st January.—Left Kaichwa at 6 A.M., for Port Anson, arriving at 9 A.M. Picked up two Andamanese who knew the country well here and proceeded to the southern end of the harbour called by the Andamanese Dum-la-chorag. Set off for the shore at once with four policemen and a large party of Andamanese. We rowed a short way up a creek called by the Andamanese Dum-la-chorag-jig, and then landed in the mangrove swamp, taking the precaution to hide our rowlocks in the jungle. We marched through this for 2 or 3 miles. It was fairly open ground, but the mangrove mud was rather trying walking. At the end of the swamp we divided into two parties and separated to search for tracks. My party soon picked up some footsteps, and after a little hesitation found a Jarawa path and proceeded along it. This was of the same description as those I had previously struck and I knew we were on a Jarawa highway. After going about a quarter of a mile we overtook Mr. Bonig's party, which had struck the track a little sooner. We all proceeded along together, and after going up and down hill for 2 or 3 miles, as we ascended a steep hill, a clearing was visible through the jungle. With extreme caution the Andamanese advanced, and on the summit sure enough was the big Jarawa camp. The Andamanese call the place Pochang, and it was as far as I can judge 5 miles from the mouth of Dum-la-chorag-jig Creek. We advanced to the hut and found it empty. After seeing the substantial hunting huts erected by the Jarawas in the jungle, I had been prepared for a big house, but I never expected such a large, well constructed building. It was roughly oval in shape, the length being 60 feet and the breadth 40 feet, while it was 54 yards in circumference. Seven stout posts in a rough circle in the centre of the house were the main supports of the roof. These were about 17 feet in height, and some were 8 inches in diameter, and all were barked and smoothened. Rafters stretched from these to bullies on the outer circle, where the roof sloped to about 3 feet from the ground. Except that it had no floor it was quite as good as an ordinary Shan or Karen house, and was large enough to contain from 80 to 100 people. From the top of the roof, between the 7 centre posts were suspended, on strips of cane, 9 or 10 feet long, over 250 pig skulls, neatly fastened up in basket work. Below the skulls was the big fire-place, around the sides of the hut were the smaller fire-places, evidently used by separate families. There were about half-a-dozen of these, but when the house is in full occupation there would be at least a dozen. Each fire-place consists of four stakes driven into the ground. Between these the fire is lighted, and some 3 feet from the ground a piece of neat matting like a chick is fastened to the stakes so as to form a shelf for the meat, etc. A dozen well made vessels which the Andamanese said were honey pots were suspended from the rafters, as well as baskets of all sizes, unstrung bows, leaf water vessels, and other things. The thatching was decorated with

342

342
[534]

[491]

000

bunches of leaves like fans used in their dances, and of these there were hundreds. Several children's bows were found, also wooden balls for them to play with, and a rough circular piece of wood which the Andamanese said was rolled along, and into which they shot their arrows. There was a large *degchi* made out of a tree trunk fitted into one of the honey pots, and neatly-worked mats used as shelves for the food, and also I think to sit on. Among other things I discovered a glass bottle, and it is worthy of note that they had a stock of firewood chopped and tied up with cane ready for use in one corner of the building. The house was on the summit of a hill, and there were seven paths leading up to it. All were well cleared at their opening on to the hill and each could be commanded by a man with a bow and arrow. Over two of the entrances were raised platforms of logs sloping from the ground to about 3 feet in height. These were the look-outs and each commanded a path and my own impression is that when the camp is in habitation, over each path a similar platform is erected, and each path thus well commanded. The main approach leading due north was as well cleared as a Forest Department road, and must have been 15 yards broad at the exit from the camp. Large trees had been felled and saplings cut a foot from the ground, and around the hut the grass had been cleared as carefully as at a jungle pongyi-kyang in Burma. They had even taken the trouble to cut down several large trees, one quite 5 feet in diameter, evidently to have a view of the next ridge. In fact so much care had been taken both in the building of the house, and the clearing of the precincts, and so well were both done, that it is difficult to believe that savages have been able to do this unaided. The Andamanese say there is another, possibly two similar huts to this. They say that the whole Jarawa tribe collects in one of these in the rains. I am rather doubtful myself whether the whole tribe could occupy the house; I rather think they under-rate their numbers, as the traces of them on every side in the jungle make me think there are from 80 to 100 men, whereas the Andamanese put down their numbers at 100 all told. They say that they burned a similar hut to this some years ago at Mautililek. In the dry weather the Jarawas scatter hunting and live in their hunting huts.

After exploiting the house we considered what was best to be done. At first we determined to camp in the house for the night, and for that purpose sent back a party to bring up food. Then leaving a guard of Police and Andamanese we went down the main path towards the north. It was very easy going, and though it narrowed from its 15-yard entrance to a path only wide enough for a man, there was no difficulty in getting along. We, however, found no fresh traces, indeed the only track we saw was that of a man who the Andamanese said was going to look after the house. They explained that every two or three days in the dry weather a man or two goes to see that nothing is wrong with the house. After proceeding about a mile we again considered what it was best to do, and eventually, I came to the conclusion to leave the house and to return. I took one specimen of everything to take back to Port Blair, and left everything else in its place so as not to frighten the Jarawas. We then returned as fast as we could, reaching the launch at 6 p.m. Today's expedition was not a hard one. We had had a tramp of 5 miles or so to the camp and a mile further on and back, so the whole day's march was not more than 12 or 13 miles.

February 1st.—Started from Port Anson at 6 a.m. and arrived 10-30 a.m. at Port Blair. Received orders to start the next day, and return with Mr. Rogers.

February 2nd.—Left Port Blair at 7-45 a.m. and arrived at Duratang at 10-45 a.m. Proceeded on to Jatang at 11-30 a.m. Met Mr. Rogers and handed him the Superintendent's letter. Returned with him at once getting back to the launch at 4 p.m.

February 3rd.—Started at day-break and anchored in Port Anson harbour at Dum-lachoring at 9 a.m. Started off for the Jarawa house in boats at 9-30. On this occasion we pulled considerably further up the creek so as to avoid as much as possible of the mangrove swamp. On landing we almost at once came on the fresh tracks of five Jarawas, so leaving a guard of one policeman and several Andamanese at the boat, Mr. Bonig and myself followed them for about half a mile, but as we found they were only following our tracks of Friday we returned, and all made for the Jarawa camp at Pochang. We arrived about noon. We found the Jarawas had visited it since our discovery of it on January 31st and had carried off all the more valuable articles, such as the *degchi* and the honey pots. I had feared this when we came on their fresh footsteps. They had also slightly dismantled the house so as to make rude barricades on the unprotected approaches. I sent our Andamanese into the jungle to see that there were none lurking near, and then Mr. Rogers photographed the house, exterior and interior, while Mr. Needham, who was also with us, sketched it, after which we removed all the remaining baskets and other belongings, and cut down the pig skulls in the centre. After this we collected the Andamanese and they executed a war dance with the Jarawa leaf-fans. Then gathering up the trophies, consisting mostly of pig skulls, we returned to the launch, arriving at 4 p.m. Weighed anchor and proceeded to the Andaman Home at Port Anson, where we remained for the night.

February 4th.—Left Port Anson at 11-30 a.m., arriving at Port Blair at 4-30 p.m. The four policemen who accompanied Mr. Bonig and myself on our several marches worked very well, and were always close to us. The work of the smarter boys among the Andamanese was splendid, and their tracking was a revelation to me. Their unerring knowledge of the jungle too was marvellous. For instance they had only visited Gering-chapa-jig once previously and that years before. Yet without a compass and with hardly a glimpse of the sun to guide them, they never faltered, knew exactly where they were and took the nearest way home. Two or three of them afterwards pointed out our position

correctly on the map, and told us where we should have to go to find the Jarawa Head Quarters. Without them we should have accomplished nothing. I am rewarding them suitably for their good work. 000

Extracts from the Report and Diary from Mr. C. G. Rogers, Deputy Conservator of Forests, Port Blair, from 26th January to 4th February 1902.

My party went out into the forest beyond the Jatang camp, but did not find any traces of Jarawas. They were out the whole day long and returned in the evening to camp. As they returned very late to camp on the evening of the 28th, I gave them a day's rest on the 29th and started on the 30th myself for a three days' trip into the interior.

The Andamanese sent were all young and, I think I may say, inexperienced men, for we came upon comparatively recent tracks of the Jarawas and a fresh camp, which I think they must have occupied the night before they killed the two convicts on the 11th January, but they absolutely failed to follow up this clue.

As soon as I had satisfied myself that the Andamanese were not working properly and that they were only moving in circuits and not going far from camp, I took the direction of our course into my own hands and steered due west.

We passed over a succession of hills, chiefly running in a generally north and south direction, and crossed a large number of streams, also for the most part flowing south or north. Many of these contained running water which was shallow where it was flowing (6 to 9 inches deep), but contained a large number of deep pools. Two at least of these streams contained fresh water fish, 8 to 12 inches long, and, I think, may be considered to be perpetual water-supplies which never dry up. The water in them was deliciously cold and perfectly sweet and good. The sun only shines on the water in the middle of the day, so they lose very little water by evaporation.

There is infinitely more water in the interior of the island than there is near the coast and the Jarawas can never have come to Jatang or other places where they have attacked convicts—in my opinion—in search of water. Pig tracks were also plentiful. All streams mentioned in my diary contained a good supply of drinking water.

We saw no foot-prints of Jarawas while going west. They, I think, chiefly use the beds of the streams as thoroughfares and do not as a rule go straight across country; though they would cross some ridges to go from one stream to another.

Near the place where we camped on the night of the 30th, we found a prickly cane cut with a *dah*, which showed that the Jarawas had been up that stream some time.

I never saw the sea on the West Coast, nor do I exactly know how far across the island I reached, but think that I must have crossed about half-way, and that with five days' provisions it would be possible to cross and recross the island near Jatang if you go due west through and over everything and due east back again.

I noticed some padouk near Jatang beyond where the working for London squares had gone.

After we had passed the first large stream running south, I saw no padouk. The forest seemed to be very poor, to contain but few large trees, and to be composed chiefly of small poles or trees and a dense matted undergrowth of canes, creepers and creeping bamboos, which made it very difficult to force one's way through it and formed an efficient screen against the sun.

The map does not accurately represent the nature of the interior of the island. There must be nearly 20 ridges to be crossed in going from Jatang to Ike Bay.

Most of these are not very high, probably not more than 300 to 500 feet, while some of them are as much as 800 to 1,000 feet I think.

The consequence of my having taken the Andamanese straight up and down all the ridges going north and south was that they told me, when I had decided to turn back, so as to reach Jatang while our provisions lasted, that they were absolutely unable to take me back to Jatang. So I had to guide the party across the island myself by means of a compass which I carried with me and was much relieved when the Andamanese recognised (at 3-30 p.m.) what they thought was Jatang Hill and Duratung, as I then knew that we should reach Jatang some time the next day.

The party I took with me consisted of 8 Policemen, 1 Orderly, 10 Andamanese, and their *pahranalla*, 4 convicts as coolies, and an office peon and one of my *mullahs*.

We took a blanket each and rations and nothing else and slept out in the open near water.

We camped on the second night in an old Jarawa camp and left marks in the recent shooting camp we found that we had been there and took away the two pig skulls found there.

So far as ascertaining where the encampments of the Jarawas near Port Meadows and Jatang is concerned, the expedition has been a failure and as I failed to reach the West Coast I have been unable to locate their encampments between Port Campbell and Ike Bay.

The expedition has been useful in giving me an idea of what the interior of the island is like, which will be most useful in helping to determine the alignment of the path from Jatang to Ike Bay.

I accompanied Mr. Vaux back to the *Belle* on the 1st February, and went with him and Mr. Bonig and returned to Port Blair with them on the 4th instant.

I took photographs of the exterior and interior of the Jarawa hut, which have turned out well.

Diary of exploration into the interior of the South Andaman, west of Jatang, during the 30th and 31st January and 1st February 1902.

000

30th January, 1902.—Left camp at 7 A.M. Went north and north-west for 30 minutes and north with little west for 20 minutes first through the forest and then following a stream.

First halt for a few minutes at 8-10 A.M. Then followed a winding stream flowing generally north at 8-25 A.M., came across a pole which had been cut with a *dah* or axe and from which arrows had been made.

At 8-30 A.M. came across some foot-prints of Jarawas in small stream running west. At 8-45 A.M. found a recent Jarawa encampment* on a ridge. There were eight fire-places in it. The charred ends of the wood and the ashes showed it had not long been vacated.

The Andamanese say there must have been a lot of people there, both men, women, and children:

Two fresh pigs' skulls were tied up to bamboos, some pieces of half-burnt leaves used for roasting the meat were found and also some cups made of leaves and bamboo water vessels.

The fire were arranged more or less in a circle, and some bunches of leaf sticks said to be used for dancing were also found.

All the wood was collected and placed in a heap in the centre of the camp and two or three bamboos cut and placed over the heap to show that we had been there. There were no shelters put up.

At 8-50 A.M., a little further on, we came upon an old camp which showed no signs of having been used recently. Some decayed shelters and two decayed fishing baskets were found, but nothing else. The Andamanese then followed up the trail for a short distance and then lost it. They had absolutely lost all traces of the Jarawas at 8-30 A.M.

We then followed a stream running north till 10-10 A.M. and the Andamanese then took us up a hill to the east, where they said they thought the permanent camp of the Jarawas would be found. We reached the top of the ridge at 10-40 A.M. It is probably a spur from Jatang Hill, but we found no trace of any Jarawas.

From 10-40 to 11 A.M., we went north and west on the flank of the spur and halted from 11 to 11-15 A.M. We then followed up a stream flowing south till we came to the water parting of it and a stream flowing north.

30th January, 1902.—As the Andamanese were wandering about aimlessly I then took them in hand and directed the line of march to the west along a spur running east and west, and at 12-20 we reached a large stream flowing south where we halted till 2 P.M.

We then proceeded due west and crossed another ridge, reaching another stream flowing north and south at 2-40 P.M. At 2-55 P.M. we reached a small stream (going west the whole time) running south-east, which soon fell into a large stream with lots of water in it flowing north and south. We left this stream at 3 P.M., and reached (going west) the top of a steep hill at 3-25 P.M., and saw a high ridge running apparently north-west and south-east to the east of us. We halted here till 3-30 P.M., and then again went west down a steep slope and then along a stream till 4 P.M. We then went south along this stream for a short distance. In the stream we found a dry cane which was lying in the stream and had been cut with some cutting instrument and soon met a large winding stream flowing west where we pitched our camp at 4-10 P.M. The stream had large fish, 8 to 10 inches long, in it, and the water was perfectly fresh and nice.

31st January, 1902.—The camp was undisturbed at night. We left camp at 7-30 A.M., and went up a steep spur going west with a little south in it.

At 7-50 A.M., going west with a little south we crossed another stream flowing south with water in it, till 8-5 A.M., we went up steep up-hill and then halted for 10 minutes to let the baggage coolies catch us up; at 8-30 A.M. we reached the top of the hill. An Andamanese here climbed a tree and said that he could not see the sea, but that there was another high ridge to be crossed to the west and another high peak to the south-west from which he thought we should get a good view, and he wanted to go to the peak to the south-west and not that to the west. This I consented to and started again at 8-40 A.M., going south-west and reached another hill at 8-15 A.M. From this the peak was said to be visible, so we went on down the flank of the hill. I observed the Andamanese and found that they were not going south-west, but had turned to the west and then again to the north and were going up the hill we had just come down! Only on a different spur of it.

This proved to me conclusively the futility of allowing the Andamanese to guide our movements, so I stopped them about 9-15 A.M., and we had a talk. They then confessed that they knew nothing about finding their way in the forest and had (so they said) never had to find their way in one. I asked them if they could take me back to Jatang and they said no, they could not do so. So after some consideration I came to the conclusion that it was not wise to go further west and that I had better try and guide the party back to Jatang. For if we went further west and I was not right in my directions we might not get back to Jatang before our provisions gave out.

At 10-20 A.M., started due east towards Jatang, reached the top of a ridge at 10-40 A.M., and going due east came to a large stream flowing south at 12 noon, stayed

* The Jarawas probably slept here on the night of the 10th January, previous to their raid on the 11th at Jatang.

there till 1-30 p.m. At 2 p.m., going still due east we reached the top of the next ridge. Halted 15 minutes, reached the top of the next ridge at 2-50 p.m., having crossed another valley. Halted till 3-10 p.m. An Andamanese climbing a tree said he could see the survey station (a hill cleared of jungle with a post on it) and also Kyd Island which he recognised by a large gurjan tree, we went still due east and came to a stream with water in it at 3-20 p.m., and crossed it. An Andamanese went up it and said he had found an old Jarawa camp a little way up it. Went to see it and found the remains of two huts. It had not been used for a long while. As we had had a tiring day, decided to spend the night in the camp and to return to Jatang the next morning.

1st February 1902.—Left camp at 7-30 a.m., going due east reached a stream flowing north at 7-40 a.m., and still going west another large stream flowing east at 7-45 a.m.; this soon bent to the north, so we left it and continued going east. This stream had lots of water in it and an Andamanese speared a fresh water fish about 10 inches long in it; followed along the stream for 100 yards and left it at 8-10 a.m., reached the top of another ridge, from which an Andamanese from the top of a tree could see Kyd Island, but not the sea.

At 8-25 a.m., going a little to the east of south we reached the top of a ridge from which the top of Jatang Hill (Survey Station) could be seen.

At 9-5 a.m., going a little to the east of south reached the next ridge and halted there for 5 minutes, and at 9-30 a.m. we reached a stream which the Police had visited the second day that they went out by themselves. Picked up the Elephant tracks at 10-30 a.m., and reached Jatang camp at 11-25 a.m.

Diary, dated 5th February 1902, of Mr. M. Bonig, Assistant Harbour Master, Port Blair, from 25th January to 4th February 1902.

25th January.—Left Port Blair in the steam launch *Belle* at 6-30 p.m., with Mr. Vaux, also 1 Naik, 6 Police, 15 Andamanese, and 3 convict servants.

Arrived at Macpherson Strait at 9 p.m. and anchored there for the night.

26th January.—Left Macpherson Strait at 9 a.m., arrived at Port Moust at 11 a.m., left Port Moust at 1-35 p.m., and proceeded to Constance Bay and anchored off a place, called by the Andamanese Koyab-lar-tenga, at 2-30 p.m. Took an Andamanese canoe in tow from here.

27th January.—Left Constance Bay at 7-30 a.m., for Port Campbell and arrived at the latter place at 11 a.m. Went ashore with Mr. Vaux, first at Montgomery Island and then on the mainland to search for new traces of Jarawas.

Found an old Jarawa bow, a basket and a bamboo drinking cup in the jungle, but no new tracks of Jarawas were found; they do not appear to have frequented this place since the Census expedition in February, 1901.

The Andamanese shot 12 turtles in the evening in the shallow water between Montgomery Island and the mainland, which place seems to be a feeding ground for turtles.

28th January.—Left the ship at 7-30 a.m., with 9 Andamanese, 4 Police and 1 convict, crossed Chauga Juru between Clyde Island and the mainland and landed on the mainland opposite. Sent the Havildar of Police with 3 Constables and 3 Andamanese along a small creek into the jungle, to search for fresh tracks of Jarawas, with instructions to try and meet us about 4 miles further north. I went with the remainder of the Andamanese along the shore up to Gering-châpâ-jig and followed up the left bank, while I sent three Andamanese up the right bank with instructions to follow us as soon as they had found fresh tracks. We soon discovered that the Jarawas frequented the vicinity, there being foot-prints of Jarawas in the swamp. The foot-prints of Jarawas are easily distinguished from any other, as the Jarawas appear to walk in a crouching attitude with their toes turned inwards, most probably the result of having to live in the dense jungle of the Andamans, where upright walking would be impossible. We also observed that a large tree had been stripped by them of its bark for the purpose, as the Andamanese informed me, of making waist ornaments. After having searched in the jungle for another 4 miles to try and find our other party, we returned to the beach. The three other Andamanese had not yet arrived, so we forded the creek and followed them up and observed by the foot-prints, that they had followed a single Jarawa along the shore. We caught them up again after a little while and as it was getting late then, I decided to return on board. Going along the shore I saw the remains of a wreck: there were only left of it three anchors, some chains, part of the windlass and about 20 tons of cast iron kentledge; judging from the size of the anchors it must have been a 200 to 300 ton vessel. When I returned to the boat, I found that my other party had returned before noon without having seen anything, so I decided not to send them alone in future. Arrived on board at 6-30 p.m.

29th January.—Left Port Campbell for Bilep at day-break, arriving at the latter place at 7-30 a.m. Mr. Vaux and myself divided again into two parties, Mr. Vaux following cp Gering-châpâ-jig, while I went up Bilep-jig. We rowed about a mile up the creek and went ashore leaving the boat by itself. We soon found the Jarawa tracks and followed them up through the jungle. We saw by the foot-prints that there were two men, one woman and a child in the vicinity. We followed these up and came on a temporary encampment, where they had been resting the night previous. It consisted of only a few leaves put on the ground to sleep on and a piece of wood as a head-rest, they having selected

C00

[481]

000 for this camp a promontory on the bank of a small water-fall, where it would have been extremely difficult to have taken them by surprise. After having followed the foot-prints a few miles further south, we came on the footsteps of Mr. Vaux's party, which the Jarawas had followed to the beach, so we followed these as fast as we possibly could. When we came near the launch the crew shouted out to us that ten Jarawas were sitting under a certain tree on the beach, so we advanced cautiously, keeping a good distance from the edge of the jungle. I left the Police behind a little so as not to frighten the Jarawas by our large numbers, but we found to our great disappointment that the Jarawas had left the place and followed up the creek again; coming on our boat, they had taken away from it two rowlocks and a bucket, having left the two other rowlocks with the remainder of the gear undisturbed. They had then followed our tracks into the jungle again. As it was getting dark now, it was of no use following them any further, so we returned in our boat to the ship. I may say that the number of Jarawas who passed the ship had been greatly exaggerated by the crew, as we saw by the foot-prints, there had only been the three adults and one child that we had followed the whole day. Mr. Vaux returned on board at 9-30 P.M.

30th January.—We went on shore in the early morning and remained on the beach, thinking that the Jarawas would either return to the beach or else leave this place altogether. But as the Jarawas did not come out, we returned on board and left Bilep for Kaichwa-log, while Mr. Vaux went with his party along the beach. Arrived at Kaichwa-log at about 4-30 P.M. and anchored inside the small harbour there at about 4-30 P.M.

This is a very good anchorage in any wind, except when it is blowing from the west. Deepest water is found near the north shore of the entrance. Went on shore again with the Andamanese and searched the jungle in the neighbourhood, but no traces of Jarawas were seen. We returned on board at 6-30 P.M., Mr. Vaux having arrived an hour previously.

31st January.—Left Kaichwa-log at 6 A.M. and arrived at Port Anson at 9 A.M. Took two other Andamanese on board here and steamed down to Dum-la-chorag, where we anchored at 10 A.M. Went ashore and passed through about four miles of mangrove swamp. We then separated in two parties again and after our having crossed a short distance of jungle, we came on a large Jarawa path. Having followed it a little way up, we were caught up by Mr. Vaux's party. This path led us on to a large hut of which I am forwarding a sketch herewith, which was rough copied from an original sketch taken by Mr. Needham on our second trip. This sketch, with its explicit description, together with the report most probably given by Mr. Vaux, will make it unnecessary for me to give any further particulars. After having unsuccessfully searched the jungle for another mile or so, Mr. Vaux decided that we should take a few of the Jarawa objects of interest out of their hut and return with the launch to Port Blair.

1st February.—Left Dum-la-chorag at daybreak and arrived at Port Blair, about 10-30 A.M.

2nd February.—Left Port Blair at 7-50 A.M. for Kyd Island and arrived at the latter place at 10-10 A.M., rowed up Jatang creek with Mr. Vaux and party, and landed at the Forest Department dépôt, where we picked up Mr. Rogers, and then returned to Kyd Island.

3rd February.—Left Kyd Island at 6 A.M. and arrived at Dum-la-chorag at 8-40 A.M. Went ashore with Mr. Vaux and party to the Jarawa camp. We took away from it as many pigs' skulls, baskets, etc., as we could carry. The Jarawas who had been there the day previous had taken away all the wooden buckets we had seen there on Friday, of which a specimen had been taken away by us. We returned on board and left Dum-la-chorag at 4-35 P.M. for Lekerá-luntá where we anchored at 5-30 P.M.

4th February.—Left Lekerá-luntá at 11-40 A.M., and arrived Port Blair at 4-30 P.M.

Second Reconnaissance.

Extract from the Diary of the late Mr. P. Vaux, Port Officer, Port Blair, from 17th to 23rd February 1902.

17th February.—Left Port Blair 5 P.M. arriving at Macpherson's Straits at 8 P.M.; anchored for the night.

18th February.—Left Macpherson's Straits at daybreak, arriving at Baja-luntá at 10 A.M. Left at 10-30 with Mr. Rogers. It was a long pull and by the time we had landed and separated it was past 11. Beat about the swamp for some time for footsteps and while doing so came on Mr. Rogers. Left him at once, going south myself, while he went north. We soon came on tracks and these we followed for the remainder of the day. We soon discovered that the party of Jarawas was only just in front of us. So close were we to them, that at one place where they had sat down to take their food, we found a live fish that they had caught in the creek. We were following up a small stream and our direction was nearly due east. We slackened off somewhat as our intention was to come up with them in the evening. At about 2 P.M. we heard them cutting down branches and afterwards came to the boughs of trees that had been cut down for the insects inside them. The Andamanese said the party would be sure to camp in the evening and that then was our time. They were proceeding quite slowly, and we did the same occasionally losing

000 their steps, but never for long. About 4 p.m., we heard them commence to cut down trees for their camp, and we could distinctly hear the voices of men, women and children. It took them about an hour to prepare their huts, and then they settled down and every sound nearly was audible. With the utmost caution we got to within a few hundred yards of them, and there waited, deciding, as it was moonlight, in fact full moon, that we would rush their camp at night. It was most weary work waiting, and very cold and miserable, as we were all wet through. About 7-30 all sounds ceased, and at 8 o'clock the three best Andamanese crept away to discover where their camp was. It seemed an eternity before their return, which, as a matter of fact, was just an hour. They reported that they had found the huts and that all the Jarawas were sound asleep. We then all advanced, in nearly absolute silence at about the pace of a yard a minute. It must have been half past ten, when in the flickering moonlight we discerned their huts. I got separated from the Andamanese, who went to the back of the huts, while I and the Police went to flank. The camp was in absolute sleep. A baby cried and was hushed to sleep, while we were within 20 yards of the camp. As we stole along through the jungle, dead twigs broke and cracked and their noise at last awakened the sleepers; there were voices, exclamations, then figures could be seen emerging from the huts. A shot was fired from a rifle, then others, and all was confusion. I rushed into the middle and pulled at the post of one of the houses. I then saw a figure escaping into the jungle and I seized hold of it. This I believe to have been a woman. She escaped owing to the stupidity of a policeman. I called to one of the sepoys to seize her, and ran back again to order the firing to cease. The policeman let her go and she escaped. I believe her to be a woman, as she was smeared with white and as she did not attack me or bite, but only struggled to get loose. I had dragged her out of the jungle to the edge of the fire and all that the policeman had to do was to hold her, but even this he did not do. Two children, a girl, aged about seven, and a baby ten months or so, were seized by my direction close by. When the confusion had subsided, I made the Police and Andamanese make large fires around the camp and we collected the bows and arrows of the Jarawas and sat round the fires. I ordered a shot to be fired every quarter of an hour to scare them away in case they should return. The camp was of three huts, a mere shelter in the middle of the jungle. It was occupied by two families and two lads who did not belong to them, i.e., two full grown men, two boys, two women and four children. What must have happened is that the Andamanese got close up to the huts and then the inmates awoke. They said they shot one of the men, putting two arrows into him, a large one under the arm and another fish arrow through his thigh. Then the boys and women ran out and the Police fired and then all was confusion. I had expected when the sounds of our coming had aroused the Jarawas, that they would have run out in front and fired at myself and the Police, who were plainly visible, but they were caught so sound asleep that they could do nothing and only thought of escaping. We passed a most miserable night crouched round the fires, with a shot being fired every fifteen minutes or so. None of us had had anything to eat since seven o'clock in the morning, but fish and pigs' flesh and potatoes were found in the huts and the Andamanese had a little, while I and the Police had a few *chupatis*. Sleep of course was impossible for me and the Police, and we shivered over the fires from eleven in the night till daybreak. When it was light enough I and the Andamanese followed up the blood stains, and found the two arrows covered with blood that the Andamanese had shot into one of the Jarawas, and which the man had succeeded in pulling out. We lost the blood stains very soon and then there was nothing to be done but to return. So we set off for the coast taking the two children with us, and came out about 9. We then had a two-mile walk through the sea and mangrove swamp getting back at 10 o'clock. Mr. Rogers pulled off with the boat when he heard us fire a shot. Mr. Bonig had gone south and returned in the evening, having found no signs of anything.

20th February.—Learning from the Andamanese that there was a woman giving milk at Port Anson, we changed all previous arrangements and proceeded to Port Anson, as it was very necessary to give the Jarawa baby some milk. Left at 7-30 and arrived at 1. To my great disappointment the woman was absent in the jungle. We tried feeding the child with milk, but we could hardly force any down its throat. So after waiting until the night for the woman to return and finding she did not, I decided to send the launch back to Port Blair in the morning with both the children and Mr. Bonig, and to camp at Pochang, the site of the chief Jarawa camp, till the morning with Mr. Rogers.

21st February.—Left Port Anson at daybreak and anchored at Dum-la-chorag at 7-30 A.M. Mr. Rogers and myself, a dozen Andamanese and 12 policemen landed. Mr. Bonig with the remaining Andamanese, the 2 Jarawa children and 5 Police returning to Port Blair. It took two trips of the Andamanese boat to land all and as every one was taking a week's rations we were all heavily loaded. The tide was exceptionally high and we had a very hard time, struggling through the mangrove swamp with our heavy loads deep in water. It took us nearly four hours to do this and about an hour to finish the march up to Pochang, where all arrived, very glad to lay down their loads. We pitched camp on the ridge of the big Jarawa house. Cleared a spot and all camped. The men rigged up a shelter of saplings and leaves for Mr. Rogers and self and the others camped round. There was a stream of water at the bottom of the hill, so for the remainder of the day we made ourselves as comfortable as we could under the circumstances.

22nd February.—Started out at 7-30 A.M. with a party of 6 Andamanese and one policeman. Wandered through creeks and over precipitous hills and through dense

000

jungle all day long: found absolutely nothing but very old tracks; could not get on to any big path, and eventually, after walking many miles, got on to the main *khari* from Port Anson and walked up to our camp. Mr. Rogers arrived half an hour later. Mr. Bonig had arrived at 10 A.M. from Port Blair and left a note to say that he had gone off hunting. He did not return that night. Mr. Rogers reported having discovered the main track south and a big encampment.

23rd February.—Waited until about 9-30 A.M. for Mr. Bonig, when, as it seemed doubtful whether he would turn up until evening, Mr. Rogers and self decided to move camp to the big hunting camp discovered by him. We accordingly packed up, and each shouldering a load as before, we set off and tramped about 6 miles along a Jarawa path to the hunting camp. The road lay due south and we only climbed a couple of hills, the rest of the way being along the slopes, and along a broad stream, some 20 yards broad, flowing due south; although only 6 miles or so off, we went so slowly, carrying our loads, that it was 2-30 or so before we arrived. The hunting camp was similar in construction to several I found, consisting of six huts facing a well cleared open space. It was on a hill top and had several paths running up to it. Water was close by Gorlakabang.

[Note.—Mr. Vaux was killed on the 24th.]

Extract from the Diary of Mr. C. G. Rogers, Deputy Conservator of Forests, from the 17th to 26th February 1902.

17th February.—Left Port Blair in the *Belle* about 5 P.M. and reached Macpherson's Straits soon after sunset and anchored there for the night.

18th February.—Left Macpherson's Straits at daybreak and steamed up the West Coast of the island and through the Labyrinth Islands to the place called Talaplontga on the Andamans Topographical Survey Map (2 miles = 1 inch). Mr. Bonig found a passage through the coral reefs and anchored about a quarter mile from the shore and the estuary of the stream which enters the sea here. The Andamanese call it Bajaluntá. We landed with Andamanese to look for Jarawa tracks, camps and houses. Mr. Bonig went to the bay to the north. Mr. Vaux and self went up the estuary and landed at 11-15 A.M. He went to the south and I continued up the *khari*, and at 11-40 the Andamanese with me came across some fresh Jarawa tracks. We followed these up, and at 11-50 Mr. Vaux and his party caught us up, as the tracks they had found led them to the *khari* up which I had gone.

Each of us (Mr. Vaux, Mr. Bonig and self) had four or more Andamanese and three policemen; leaving three policemen on the launch.

Sharks were plentiful where we landed and the Andamanese shot two, one of which was killed, the other going off with two arrows in it. The one killed was about 5 feet long.

Where Mr. Vaux had caught me up, the *khari* branched. Mr. Vaux followed up the more southerly of the two streams and I went up the northerly one.

The *khari* I followed went generally north. We crossed a ridge running north and south and came into another branch of the *khari* and followed it up. On another ridge, which we reached at 12-10 (noon), was the site of an old hunting camp, which had not been recently used.

At half past twelve we left the *khari* and went through the forest on the eastern and southern flanks of the intersected point marked 677 (height in feet) on the map above referred to. We did not find any new tracks of Jarawas until about 1 P.M., when we found some new tracks, including those of two young children, and following up these tracks came upon a fresh hunting camp, which had quite recently been left, as the fires were still burning. Flies were thick on the pieces of fish which had been thrown away and some cooked fish (whole) were found in the shelters in which the Jarawas had slept, and this was eaten by our Andamanese. The pigs' skulls were found and taken away. We followed up the fresh tracks from this camp and they took us back to the *khari*, at the point where Mr. Vaux and myself had separated in the morning.

As it was late and I was very tired, not being very well, we returned to the boat, which we reached at 5-30 P.M. and waited till midnight for Mr. Vaux, who did not turn up. About 7 P.M. we heard the report of a gun, and thinking that perhaps Mr. Vaux had been benighted and was trying to find his way back to the boat, fired a shot in return and waited. About 9 P.M. we heard another shot, which we thought was nearer, so replied to it. The next shot we heard, about an hour afterwards, seemed to be further off, so after waiting till midnight, I decided to go off to the launch and return to the landing place at daylight. Reached launch at 1 A.M.

At that time I never dreamt of Mr. Vaux's having found any Jarawas. I only thought he had been following up fresh tracks and had gone too far to return to the ship that night.

About 8 P.M., while waiting for Mr. Vaux, we heard shouts to the north of us. The Andamanese suggested that the sounds were those of Jarawas. I said I thought it was Mr. Bonig's party returning home, and on my return to the launch, I found Mr. Bonig there, and he told me that they had had to wade a good deal of the way home and had to shout to keep off sharks. He was up to his neck in the water and more than once was attacked by large sharks. The Andamanese would not come into the water and Mr. Bonig had to send for them after he had reached the launch. The tide was out when we landed. It was full when we returned, and so Mr. Bonig's boat was some way from the shore on his return. The Andamanese called the place we anchored at Bajalunta.

Some poles at the camp we found had been cut with some cutting instrument, while a tree in the camp was hacked with what looked like (judging from the incisions made) an adze.

The camp consisted of three huts arranged thus:—



Arrows show entrance into huts.

The Andamanese said the camp had been occupied by two grown up men, two women and some children. The huts or shelters were about 5 feet long and 4 broad, and 4 feet high. They are made of a framework of sticks, some poles being bent down also and tied; leaves of a large palm cut with long stalks stuck into the ground, formed the back and roof of the huts. There were remains of fires inside the huts and in front of them and a considerable amount of white wood ash.

19th February.—Started at 6 a.m. and returned to the place we had landed to wait for Mr. Vaux. Mr. Bonig was asleep when I left. I left a message for him to say that I would be back at 9 a.m. He came to me about 7-30 a.m. and I asked him to go down the coast and see if Mr. Vaux had got out on to the coast and if so to bring him back, and asked him to be back on the launch by nightfall. I told him that if Mr. Vaux did not return by 9 a.m., I should go back to the launch, have some food and start off to follow Mr. Vaux's tracks and see what had happened to him.

Mr. Vaux did not return to our landing place, so I went back to the launch and had some breakfast, while the Andamanese had their food and made preparations to follow Mr. Vaux's tracks and to stay out a night in the forest, if necessary; as I had told Mr. Bonig I would do this and that he was not to be anxious about me, as I should return without fail the day after. Got ready food for Andamanese and Mr. Vaux.

While at breakfast I heard the report of a gun and saw Mr. Vaux and party on the shore at the mouth of the estuary of the creek we had gone up. Put off at once to fetch him and found that he had come across the Jarawa party, whose camp we had found. He had attacked the camp at night and taken two children prisoners. One child was a girl four or five years old, and the other a baby boy of about nine months. Mr. Vaux had camped on the site of the Jarawa camp and had shots fired at intervals to keep off the Jarawas, but was not attacked. The two men in it were said to have been wounded by the Andamanese who were with Mr. Vaux. The Andamanese shot at the men in the camp, while Mr. Vaux rushed into it. The Andamanese say there were two men, two women and two large boys and some small children.

We waited for Mr. Bonig, who returned about 6-30 p.m. He had seen a party on the shore on his way down the coast and thought it was mine; so went on and then landed and struck into the interior, but found no new traces of Jarawas, and so returned to the shore and came back to the launch soon after sunset.

20th February.—The capture of the girl and baby boy upset all our plans, as it was necessary to take the baby somewhere, where it could be fed. The Andamanese said there was a woman with a baby at Lekerlunta, (Port Anson), so we decided to take the baby there and return to Port Campbell or Bilap (see Mr. Vaux's report of his first reconnaissance) and continue our search for Jarawa houses.

Left Bajalunta at 7-30 a.m., and arrived at Lekerlunta at 1 p.m. The Andamanese woman was out on a hunting trip, and as she was expected back in the evening we waited for her.

21st February.—As the Andamanese woman with a child did not come back, Mr. Vaux decided that Mr. Bonig should take the two Jarawa children to Port Blair, while myself and Mr. Vaux went to the large Jarawa hut at Pochang and looked for the main track south, and that Mr. Bonig was to join us the next morning at Pochang.

Weighed anchor at 6-30 a.m. Reached Dum-la-chorag at 7-30 a.m., disembarked and sent the boat back to launch. Mr. Vaux, self, servants, 8 policemen and 13 Andamanese landed, while 4 policemen and 4 Andamanese went with Mr. Bonig to Port Blair. The tide was up, so we had considerable difficulty in getting up the estuary to Pochang, the site of the large Jarawa hut, which we had discovered on the first expedition. We reached Pochang about 1 p.m. and pitched camp a little beyond and above the site of the large Jarawa hut.

22nd February.—Mr. Vaux and self, each accompanied by one policeman and four Andamanese, started off in different directions to look for the main track of the Jarawas from their large hut. We left camp at 7-30 a.m. I followed the stream, from which we got our drinking water, (it flowed a little east of south for half an hour), and then climbed up the ridge, which we could see south from the camp running in a generally north and south direction. At 10 minutes past 9 we picked up some old Jarawa tracks in the bed of stream and at 9-40 reached a very old disused hunting camp on a ridge to the south of the stream, which there bent to the West. We then crossed the ridge and went south-east, and at 10 o'clock reached another stream flowing south, which we followed, and at 10-10 a.m. reached a salt water stream, which flows to the east of south and probably flows into the Middle Straits. Where we met it, it was about 40 feet wide. This is probably Pop-linta Jig.

342

ooo

000

361

We turned back from this and went west and turned south at 10-35 A.M., following down a stream which flowed into the same salt water *khari*, which was here 50 feet wide. We reached the *khari* the second time at 10-45 A.M. and swam across it. My watch got under water and stopped and my revolver also got wet. We crossed a ridge to the west of the *khari*, and came into a fresh water stream flowing south which we followed, and soon picked up a well defined track going along the flank of a low ridge with gentle slope going south. We followed along this for about 1½ miles and came on to a large hunting camp with six huts, which had been recently occupied. The huts were arranged as shown below. The arrows show the entrance into the huts.

[see p. 82 B]

The Andamanese were satisfied that this was a hunting camp on the Jarawa path going south and that we should find another large hut, if we continued to march south along the track.

000

Decided to return to Pochang as it was about 3 o'clock and consult with Mr. Vaux and find out what he had found. Followed the track, which was most distinct the whole way right back to the Jarawa camp at Pochang. Found Mr. Vaux in camp. Mr. Bonig had come and had gone out to look for tracks. Mr. Vaux had not come upon any tracks and we decided to move camp the next day to the camp I had found. Mr. Bonig did not come back this night.

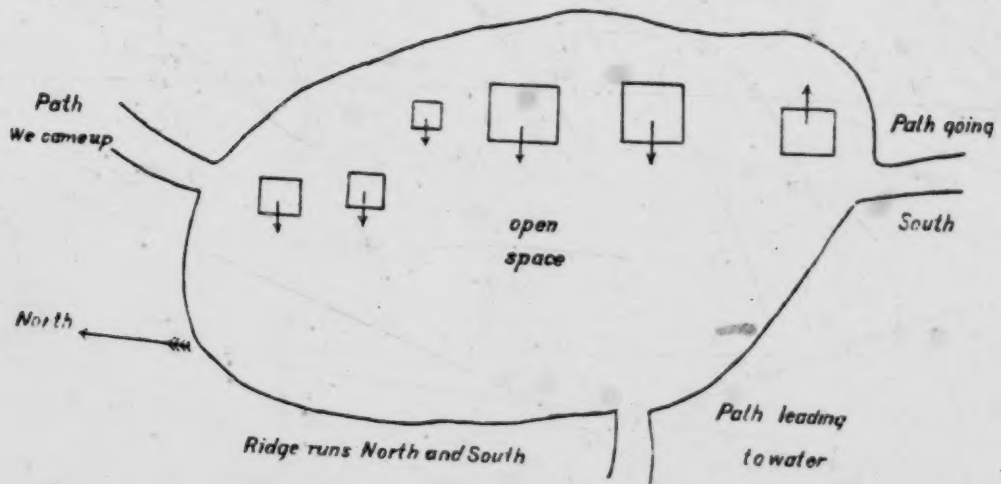
23rd February.—Waited some time for Mr. Bonig, and as he did not return, left a message for him to say where we had gone and moved our camp to the Jarawa hunting camp that my party had found the day before. Followed along the Jarawa track and reached the camp about 2 P.M. Blazed trees along the track to show Mr. Bonig where we had gone.

When we were about one mile from the camp an Andamanese (Daniel) caught us up. He had been sent by Mr. Bonig to tell us that he was going back to Pochang, as he thought we were looking for him. Daniel told us that Mr. Bonig had fever and was going back to the launch. About half an hour before nightfall, however, Mr. Bonig arrived. He had felt better when he reached Pochang, so came on and joined us instead of returning to the launch as he had first intended to do.

We came part of the way another route to the Jarawa camp and passed through another camp, which Mr. Bonig had seen yesterday and also found his footprints, so knew that he had come the way we had yesterday. He must have followed the track which led to the camp I found for a long way, and eventually gone off to some other track, where they had found fresh Jarawa tracks; which shows how extremely difficult it is to follow a Jarawa track, even when you have found it. The Andamanese called this camp Goriakabang.

[see p. 82 B]

361



[P. 82 B]

24th February.—Left camp about 7-30 A.M. Our party consisted of:—

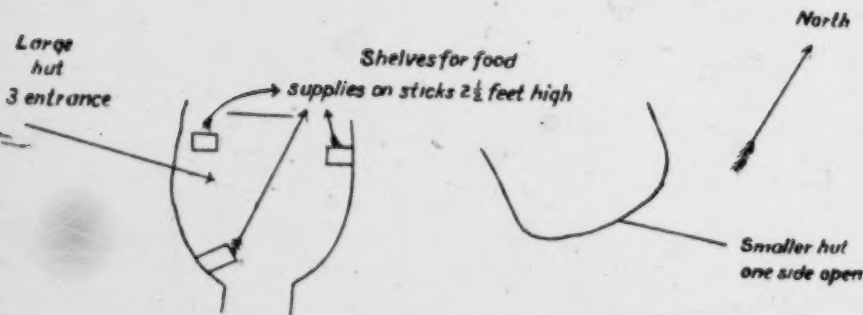
Mr. Vaux.
Mr. Rogers.
Mr. Benig.
18 Andamanese.

- (1) Henry.
(2) Giot.
(3) Magri.
(4) Daniel.
(5) Bobby.
(6) Beale.
(7) Mathew.
(8) Walaga.

- (9) Jack.
(10) Thomas.
(11) Ará.
(12) Dora.
(13) Benet.
(14) David.
(15) Beahet.
(16) Iraged.

One policeman.
My matted Sher Kina.
Mr. Benig's servant.
Mr. Vaux's servant.

We first went south with little east in it along a stream, which we then followed up to its source and along a ridge and up a slope to the top of a rounded hill with gentle slopes, the highest hill about. The top of the hill was a bamboo forest. Found a rains hunting camp perched on the summit of the hill of two huts, one of which was much larger than the cold weather hunting camps. The huts were arranged as shown below and were under the shade of bamboos.



We reached this camp about 9 A.M. The thatching leaves were quite dry, but the roofs were in good order and waterproof. There is no water anywhere near it in the cold weather.

David (Andamanese) and two others had come on as far as this camp yesterday while reconnoitring for the path, so took us at a smart walk to it.

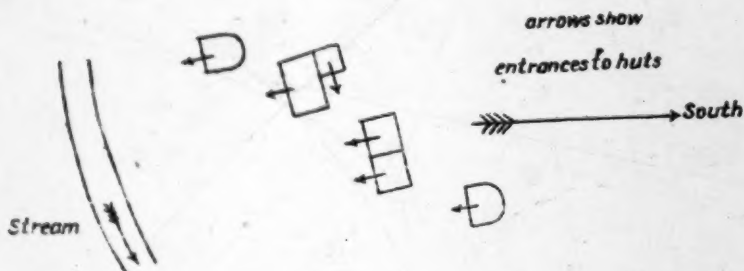
We then went down the flanks of this hill (shown as an intersected point on the survey map) and followed down a stream some way, and leaving it crossed a ridge and followed down another stream and came upon another hunting camp, which had been recently vacated: the Andamanese said probably about four days ago.

On our way to this camp we found some branches bent down in hoops and tied across the path. The Andamanese said this was done to stop the birds from telling us where the Jarawas had gone. In the camp two large stones were tied up with a piece of bark and left in the camp; we were told that this had been done for a similar reason.*

* This may account for the heavy stones which are found on the bodies of persons murdered by the Jarawas.

361

There were six huts in this camp arranged as shown below. The thatching leaves were still green.



000

We reached this camp about 10-30 A.M. and went on along the flank of the hill and then down a stream, both going generally south. About 11-30 A.M. we heard the sounds of an axe and also voices, which were Jarawas'. So we at once retired up the stream, while the Andamanese went down a little way to see where the camp was, or if it was a camp. They came back soon after to say there was a camp with six huts and probably eight men belonging to it. So we decided to wait till evening till the men had come home with their bows, arrows, and tools, and to rush the camp when the moon rose, and try and capture a woman to ensnare the Jarawa baby Mr. Vaux had taken. It was of no use taking the camp till the men had returned, as they would have their bows, arrows, and tools with them.

We waited till the moon was almost visible and then started down the stream towards the camp. It was too dark, so we soon had to halt until we could see a little better. After two halts we came to a more open place, from which we thought we could see the red glow of the smouldering logs of the Jarawa fires and after a short halt crept on once more. Three Andamanese went first, then came Mr. Vaux holding the hand of an Andamanese, I held Mr. Vaux's hand, Mr. Bonig held mine, the Policeman held his; and so on.

We crept down into a depression and then seeing dimly huts in front of us, Mr. Vaux sprang up and rushed forwards to the nearest hut. I followed, passed him and rushed into a hut to the left. The Andamanese behind us fired arrows into the huts, while we were rushing on them. One shot was fired. My *mallas*, Sher Khan, followed me. I caught sight of a figure trying to escape and found that I had secured a woman with a baby. My *mallas* secured another woman with a baby.

Soon after this Mr. Bonig came to me and said that Mr. Vaux was badly wounded and he thought was done for. As soon as I could see some one to whom I could make over the woman I had caught, I went to Mr. Vaux's help, as Mr. Bonig had come to me a second time. Meanwhile the sepoy and Mr. Vaux's Burman (a free man) were firing carbines. I did not use my revolver. When I came to Mr. Vaux I found him in a semi-unconscious state, and he died two minutes afterwards.

When Mr. Vaux had passed away, I stopped the indiscriminate firing of carbines which was going on, secured the prisoners, two women and six children, including two babies, and posted the sepoy on one flank of the camp, some Andamanese to look out all around the camp, and went to the other flank myself, while Mr. Bonig stayed mid-way between myself and the policeman. The moon was not very bright, so it was impossible to make a thorough search of the huts, nor to make our way back: so I decided to stay where I was till daylight appeared and then to search the camp thoroughly for tools and pots, etc., and if possible to get back to the steam-launch with Mr. Vaux's body. The police sentry stuck to his watch well all through the night.

Mr. Bonig, self, and sentry fired shots occasionally to show the Jarawas we were on the alert and to prevent a night attack. The Andamanese gradually all fell asleep and it was very hard to keep any of them awake, but Mr. Bonig, self, policeman, and my *mallas* kept watch the whole night through. We were not attacked and I was very thankful when the first rays of dawn became apparent.

25th and 26th February.—As soon as it was light enough I sent off two Andamanese to fetch six policemen to help to carry Mr. Vaux's body.

We then made a thorough search of the camp and found one axe of European manufacture, several Andamanese adzes, and two rude knives, probably made of dabs, and a number of honey-pots, etc., of which we took away as many as we could, as well as all the bows and arrows that we could find.

Daylight showed that the huts were arranged, as shown below, on a flat piece of land in the bend of the stream.

361

[See p. 85 B]

The stream had well defined steep banks from 3 to 6 feet high around the camp; where we entered it, the bank was about 4 feet high. No dead bodies of Jarawas were found in the camp, and we did not go down the stream to look for them.

As it was a very long way from the launch I had to push on as quickly as possible, so as to reach the launch before nightfall. The place where Mr. Vaur was killed is called Wibtang, and it had taken us three days to get from the launch to this spot. The Andamanese know the names of these places, as they once occupied this country and were driven out of it by the Jarawas, when they were pushed north by the expansion of the settlement.

Mr. Vaur's body was slung to a strong bamboo and hung down from it and the bamboo was carried by:—(1) the policeman, (2) my *malla* Sher Khan, (3) Mr. Vaur's Burman, (4) Mr. Bonig's Burman, until the Police met us and after that it was carried by the Police to the coast.

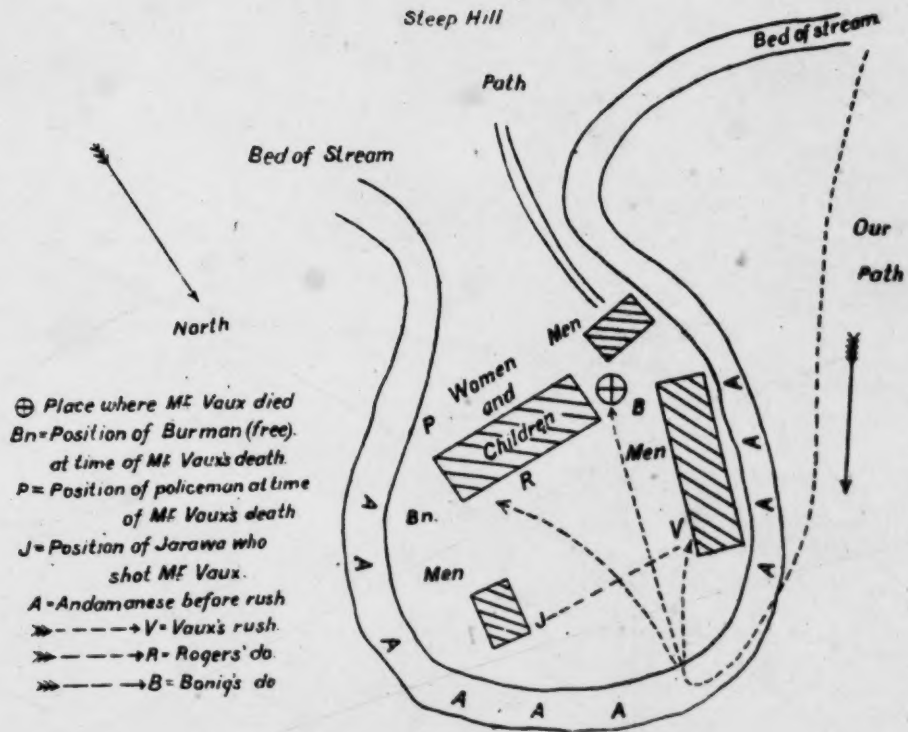
The policemen behaved admirably. They met us about half mile to the south of the Rains Camp on the high hill (intersection point on survey map). We left the camp which we had rushed at daybreak and must have reached the camp where the policemen were left behind about 11 o'clock. The women and children came with us quite cheerfully and willingly and gave us no trouble.

We halted about quarter of an hour at Goriakabang Camp, where we all had some food, while the things were packed up, and then pushed on to Pochang Camp, leaving behind us what rations we had not consumed, so as to lighten the loads to be carried as much as possible. About 4 miles from the Pochang Camp Mr. Bonig, who was in the front part of the line, told me that Andamanese Mathew had been shot in the arm by a Jarawa. Shortly before this some of the Andamanese with me told me that they thought they had heard some Jarawas going on ahead.

Mr. Bonig then led the line, while I stayed in the rear with two policemen and three Andamanese, and I put some more policemen in the middle, and after a temporary halt pushed on as fast as we could, keeping all close together and firing at intervals to keep off the Jarawas. I was not told how many Jarawas had been seen and what they had done, so was anxious until we had got right out to the estuary. We reached the estuary of Dum-la-c' orag about 3-30 P.M.: so if we consider that we walked 1½ miles an hour, which I think we did, we must have covered about 17 miles of country.

[p. 85 A]

361



[P. 85 B]

000

The tide was out when we reached the sea coast, and as it was full tide when we had landed, we had considerable difficulty in pulling the boat to the water and getting off through about three-quarters of a mile of soft mud to get the boat afloat. I reached the launch at 7-30 p.m. Mr. Bonig at once started. Crossed the bar at the entrance of the Middle Straits and ran straight down to Port Blair.

Extract from the Diary of Mr. M. Bonig, Assistant Harbour Master, from the 17th to 29th February 1902.

17th February.—Left Port Blair 5 p.m., arriving at Macpherson's Strait at 8 p.m.; anchored for the night.

18th February.—Left Macpherson's Strait at daybreak for Bajalunta. Bajalunta-log is the Andamanese name of the Bay, about 8 miles south of Port Campbell. It is named on the chart Talap-lunga, which the Andamanese informed us to be incorrect. Anchored in this Bay at 10 a.m., and went ashore in the dinghy with six Andamanese, three Police and two Burmans. Landed on the north shore of the Bay, Messrs. Rogers and Vaux and party landing at the mouth of the creek at the head of the Bay.

We found new tracks of Jarawas almost as soon as we landed, and followed them up; the Andamanese also shot a pig which had been previously wounded by Jarawas. When it was getting late in the afternoon we lost the Jarawa tracks, so we cut through the jungle towards the sea-shore, and followed it. We then came upon a temporary Jarawa encampment, and from it we took away two bamboo water vessels which had been left behind. This is the only Jarawa encampment we found near the sea-shore, the others all being in the interior. As it was getting dark and the tide rising, we had a very difficult journey back to the ship; often going up to our necks through the sea. The place was infested with sharks, but we kept them off by shouting constantly. One of them, about 6 feet long, came straight for us and I only just managed to save it away by jumping on it, touching it with my hands. The Andamanese refused to come any further with us and they camped, while I with the Police and Burmans went to the boat, which we reached at 10 p.m. Two Andamanese had found their way through the jungle to the boat, so with these I went on board and sent the boat back for the remainder. We heard the report of a gun shortly after we came on board. Mr. Rogers arrived with his party at about 12 p.m., Mr. Vaux remaining in the jungle for the night.

19th February.—Mr. Vaux not having arrived this morning, Mr. Rogers went ashore at daybreak, while I followed him about an hour later. After consulting with Mr. Rogers, who was waiting on the shore for Mr. Vaux, it was decided that I should go ~~about~~ a few miles along the shore and then go in the jungle. I accordingly went about 4 miles down the coast and searched the jungle the whole day. I did not find any new tracks of Jarawas, but a number of old encampments showed that they had frequented this part of the jungle six months ago. On my return to the launch about 7 p.m., I found both Messrs. Rogers and Vaux on board and I was informed that Mr. Vaux had captured two children (one girl and one baby) the night previous, which he had brought on board. Mr. Vaux therefore decided that we should start for Port Anson early the next morning to find an Andamanese woman to nurse the Jarawa baby, which would take no nourishment from us.

20th February.—Left Bajalunta for Port Anson at 7-30 a.m., arriving at the latter place about noon. To our great disappointment we found that the Andamanese woman, who was to have nursed the baby was absent in the jungle. We waited for her the whole day. As she did not return, Mr. Vaux decided that I should take the Jarawa children to Port Blair early next morning, while he and Mr. Rogers would encamp at Fuchang, the site of the Jarawa camp we had found on our previous trip.

21st February.—Left Lokralunta at 5-30 a.m. for Dum-la-chorag where Messrs. Vaux, Rogers and party disembarked. I proceeded to Port Blair, arriving at the latter place about noon.

Delivered Mr. Vaux's letter to the Chief Commissioner, who ordered that the Jarawa baby was to be taken to the Haddo Home and the little girl was to remain at Government House with the Andamanese woman Tupay. As it was too late to return to Port Anson that afternoon, I decided to leave early next morning so as to arrive outside Middle Straits at daybreak.

22nd February.—Left Port Blair at 3 a.m., arrived at Port Anson at 7-30 a.m. Anchored the *Belle* at Dum-la-chorag.

Proceeded at once with one Police constable and four Andamanese ashore to Fuchang. We had great difficulty in getting to the camp, as the mangrove swamp, which we had to cross, was completely under water. Arrived at the camp at about noon. I found that Messrs. Vaux and Rogers had both left in different directions to search for Jarawas. I therefore left the Chief Commissioner's letter for Mr. Vaux with the Police Havildar and went with my party of Police and Andamanese in another direction to search for Jarawas. We soon came across a Jarawa encampment consisting of four huts. We followed the path which led from it further south. Having followed this about 4 miles, we found fresh tracks of eight Jarawas. We followed these till the evening, and as it was too late to go back to the camp, we remained for the night in the jungle.

23rd February.—Returned to the camp at Fuchang. On our way the Andamanese informed me that they could see by the foot-marks that both Messrs. Vaux and Rogers had

gone further south, most likely to search for our party; so I sent two Andamanese to follow them and to inform them of my return to Poichang. On our arrival there at 2 P.M. I found a note from Mr. Vaux tied to a tree, saying that they had proceeded to another camp, 6 miles further south, and that I was to follow them there, or else to return on board. I followed them and reached the camp at about 5-30 P.M. 000

24th February.—Left camp at 7-30 A.M. with Messrs. Vaux and Rogers, one policeman, three convict servants and sixteen Andamanese. We followed up the Jarawa track and came on an encampment about 9 o'clock. We proceeded on our way and came on another encampment an hour later. As the Jarawas had apparently only recently left this, we did not disturb it, for fear of disclosing our whereabouts to the Jarawas, should they be in the neighbourhood. After having rested a little while, we proceeded till at about 11 A.M., we heard the Jarawas shouting a short distance ahead. Mr. Vaux then decided to wait till the evening until the Jarawas had gone to sleep and to attack their encampment as soon as the moon rose. So we waited there the whole day, and when the moon rose we proceeded very slowly to the attack, a few Andamanese going ahead; and Mr. Vaux, Mr. Rogers and myself holding each other's hands so as not to lose ourselves in the dark, slowly crept up to the Jarawa camp. As soon as we got near the camp we waited for a second and when Mr. Vaux passed the word, the Andamanese shouted and shot a number of arrows in the Jarawa huts. Mr. Vaux then at once with his *dai* in his hand rushed to the nearest hut on the left, while Mr. Rogers went to the right and I went straight ahead. When I had advanced a few yards the Andamanese Golaht shouted out to me "*Saish kaidhe, Jarawa tir marta hai, banduk maro*:" so I lay down flat on the ground, and not seeing any Jarawa about I fired my revolver in the air. I had not done this before, as Mr. Vaux had previously ordered us not to fire till he passed the word. I then saw several children come out of the hut behind which Mr. Rogers had disappeared. I crept up and secured these with the help of an Andamanese. I then heard Mr. Vaux shouting out "I am hurt," and turning round I saw him staggering and fall down. I at once went to him and asked him where he was hurt, Mr. Vaux only replied "I am done," and the Andamanese showed me that he was wounded by an arrow in the left side. Mr. Vaux then said "For God's sake take this arrow out." As I saw that the whole of the arrow head had disappeared into his body, I went for Mr. Rogers's assistance. I found Mr. Rogers struggling with a Jarawa woman, and he said that he would come in a second, as he did not wish to let the woman go. I then returned to Mr. Vaux. The Andamanese were just extracting the arrow and Mr. Vaux asked for Mr. Rogers and myself and if we could do nothing for him. As Mr. Rogers had not turned up then, I became anxious about him, thinking that the Jarawas might have wounded him also. I went to him again and told him that I thought Mr. Vaux was dying. We both went back to Mr. Vaux, who was only a couple of yards away. We bandaged him up. Mr. Vaux asked for light and water, which we gave him. After this Mr. Vaux fell back and died. We then waited in the Jarawa camp till the morning, firing a gun every half an hour to keep the Jarawas away.

25th and 26th February.—As soon as the day broke we gathered together the bows and arrows the Jarawas had left behind, and made arrangements for carrying Mr. Vaux's body. Having done this, we started back for the launch with it and the six Jarawa children and two women we had captured. Mr. Rogers sent two Andamanese ahead to go to the camp and tell the Havildar of Police to send six policemen to carry Mr. Vaux's body. We reached the camp about noon and after having packed all our things we proceeded, I going ahead and Mr. Rogers bringing up the rear. As I thought the launch would have no steam I sent some Andamanese and a free Burman with a gun ahead to inform the syrang to have the launch ready to proceed to Port Blair that evening. We had not advanced more than a few hundred yards when we heard the report of a gun; and directly afterwards caught up the party we had sent in advance. We then saw that the Andamanese Mathew had been wounded by a Jarawa, who had hidden behind a tree in front of him. The Burman had at once fired the gun and two Jarawas had escaped in the jungle, one of them leaving a bundle of fish arrows behind. The arrow which wounded Mathew was an iron-pointed one, which had wounded a Jarawa during the attack on the camp and had been extracted from the wounded man and fired at Mathew. This shows that they had not any iron-pointed arrows left with them. We must have secured all the iron arrows they had. Without further accident we reached the boats. To our further disappointment we found that the dinghy had sunk in the creek, most likely having been caught under the mangrove roots, and all the oars had floated away. We floated the dinghy again and reached the ship at 5-30 P.M. Mr. Rogers came about an hour later, his boat having been left by the tide high and dry in the mangrove swamp. After everybody had come on board we started for Port Blair, arriving at the latter place about midnight.

III.

VISIT TO THE MIDDLE STRAITS TO SEE AT LIBERTY CAPTIVE JARAWA WOMEN AND CHILDREN.

Itinerary of C. Gilbert Rogers, Esq., Deputy Conservator of Forests, Andamans Division, from the 11th to 14th March 1902.

11th March.—Left Port Blair in the steam launch *Belle*, accompanied by Mr. Buzig, some Andamanese and six Military Policemen and the two Jarawa women, each

102

Map illustrating the journeys of Messrs Vaux and Rogers
in the Jarawa Country in the SOUTH ANDAMAN in January
and February 1902.



Mr. Vaux's journeys, Red.

Mr. Rogers' journeys where they differ
from Mr. Vaux's, blue.

[facing p. 88]

000

with a child, and three girls at 8 A.M. The names of the Jarawa captives whom we were taking back to release are, so far as we can gather, as follows:—*Women*—Wátang-mai, Tijé Buluwa; *Infants* (boys) Atu-to-ané, Wótama-tamané; *Girls*—Tijé-tang, Etélé Orihi. The last-named girl came from the Bajalunta Hunting Camp, the others from the Wibtang Camp. The two boys from the Wibtang Camp, sons of Wátang-mai, and the infant from the Bajaluntas Camp, whom the women would not take away, we left behind in Port Blair.

We reached Duratang at 10 A.M. and landed the Jarawas to see the Andamanese Home and also to get some yams for them and then proceeded up the Middle Strait. The whole of the country on either side of the Middle Strait seemed familiar to them and they made signs that they would like to be landed near the Papalunta Jig, but this we did not do.

We proceeded straight to Dumlachorag, anchored, and putting the Jarawas into a boat and taking an escort of Andamanese and four policemen, rowed up the creek and landed the Jarawas as near to the Pochang Jarawa Camp as the creek would allow of our doing. We took them a short distance across a mangrove swamp on to a low ridge, where we made a fire for them. We also made shelters with the blankets we had given them, deposited what we could carry of the yams, beads, red cloth, coconuts, earthenware, cooking pots, and a bucket of drinking water and left them.

Near the boat we found some plantains and coconuts which had accidentally been left behind. I returned with these to the camp accompanied by some policemen and Andamanese. The women did not run away when they saw us coming back, but smiled when they saw what had brought us. While we were away the baby had upset the drinking water. They made signs to us that they could get some near by and asked us to break some coconuts for them. This we did and left them.

We then returned to the steam launch *Belle* and proceeded to Port Anson where we anchored for the night.

12th March.—Left Port Anson at 7-20 A.M. for Dumlachorag; anchored there, and proceeded in a boat with Police and Andamanese escort to the ridge, where we had left the liberated Jarawas yesterday. Reached the camp about 9 A.M. Found the camp empty. The fires were still burning. The women and children had gone away with as much of the presents and food as they could carry. They had taken with them all the beads, most of the red cloth, one set of earthenware cooking pots, all the coconuts, and as much food as they could carry, and would doubtless return with their men for the remainder of the things.

We then returned to Dumlachorag and proceeded to Port Anson and went outside and salvaged a teak log and a numbered padouk square, which were stranded on the West Coast of the Middle Andamans. Stayed the night at Port Anson.

13th March.—Left Port Anson 6 A.M., and steamed down to Shoal Bay. Anchored a little way up Shoal Bay Creek at 10 A.M., and proceeded in a boat to Jatang. Found the Deputy Ranger in camp, but the Havildar of the Police and the Forest Jemadar were in the forest with the files. Inspected one of the new elephants, which had been rubbed by a badly fitting galaband. The abrasions are not serious.

We then inspected the clearing for the path from Jatang to Ike Bay. The work was progressing satisfactorily, but too many small trees had been left along the line in the portion cleared after I left Jatang: ordered that all those trees should be cut and the work pushed on with due despatch and a report of the progress made submitted to me weekly. About 3,000 feet of line has been cleared up to date.

Returned to Shoal Bay on the ebbing tide and dropped down to Duratang, where we anchored for the night. Inspected the Andamanese Home.

14th March.—Steamed down to the mouth of the Pirij Creek in the early morning. It was low tide, so had to make our way afoot through the mangrove swamp to the camp. A timber boat with new convicts was off the mouth of the creek waiting for the tide to rise when we got there.

All the men and the elephants had gone to work in the forest.

Two elephants, one new and one old, were said to be on the sick list, but as they had gone into the forest for fodder I did not see them.

Found Daniel and three Andamanese and three sepoy of the Military Police at Pirij. They had been hunting for the three Burmese runaways, who had attacked the self-supporters near Kalatang not long ago, but had failed to catch them. They had come across two places where they had camped, but state that they skillfully mix their trail with those of the self-supporters and convicts working in the forest, and that in consequence they had eluded pursuit.

Returned to the launch and started for Port Blair. Reached Ross at 12 noon and reported my arrival to the Chief Commissioner.

IV.

LIST OF JARAWA ARTICLES TAKEN BY MR. P. VITX FROM THE HUNTING CAMP AT BAJALUNTA ON 19TH FEBRUARY 1902.

- 1 Honey pot, empty.
- 1 Do. with resin and cyrena shells.
- 1 Do. with honey edibles and prepared beeswax.

000

- 2 Pottery vessels.
- 5 Net bags, empty.
- 1 Do. with 2 packets red ochre in palm leaves and fibres for binding arrows.
- 1 Packet honeycomb.
- 2 Baskets, cane.
- 2 Andaman adzes, made out of dahs.
- 1 Basula, new, of Forest Department marked with A (broad arrow). Stolen on 22nd November 1901.
- 1 Bowstring.
- 2 Bows.
- 92 Bamboo-shaft and wooden-pointed fish-arrows.
- 92 Do. iron-pointed fish-arrows.
- 3 Barbed iron pig-arrows.
- 16 Bamboo arrow-shafts.

LIST OF JARAWA ARTICLES TAKEN BY MR. C. G. ROGERS, FROM THE HUNTING CAMP AT
WISTANG ON 24TH FEBRUARY 1902.

- 6 Honey pots, empty.
- 1 Do. with fibre.
- 1 Do. with fibre in honey and child's wooden feeding brush.
- 5 Andaman adzes, of sizes.
- 1 Axe, European head.
- 2 Knife blades made of dahs.
- 1 Adze head—European make.
- 1 Honey pot with king-crow chaplet, 2 bowstrings, 2 string cards, 2 pieces of resin, and 5 shells.
- 1 Palm leaf containing netting materials in net.
- 7 Empty nets.
- 1 Net containing 2 pots of pigment for pig arrows.
- 1 Net do. 2 pieces of iron and 4 shells for pigment.
- 1 Packet red ochre.
- 1 Net containing 2 pieces of iron and 2 small nets.
- 1 Piece of hollowed wood, containing red ochre prepared for arrow heads.
- 7 Iron-headed arrows.
- 2 Pots.
- 96 Bamboo wooden-headed fish-arrows.
- 8 Bows.
- 5 Arrow-shafts.
- 5 Pig-arrows, iron.
- 1 Iron arrow head.

REPORT BY MR. C. G. ROGERS, DATED THE 19TH MAY 1902, ON JARAWA CAPTIVES WHILE
AT PORT BLAIR.

262

An infant boy and a little girl, called Orlai, captured by the late Mr. Vaux near Rajalunta (Talaplontga of the maps) were brought to Port Blair by Mr. Bonig, Assistant Harbour Master, on the 21st February 1902. The little girl, Orlai, had a very pronounced squint in her left eye. She was kept at Government House until the 26th February, when she was allowed to join the other Jarawa captives, who were taken at Wistang on the night of the 24th February and reached Port Blair on the 26th in the *Belle* in the charge of Messrs. Rogers and Bonig. The captives taken at Wistang comprised two women and six children including two babies. They were kept at first in the hospital at Haddo and after that in the Haddo Andamanese Home, as they got out of the hospital one morning early and were found at the *ghat* evidently trying to escape. After this they were placed definitely in the charge of Luke and the watchman at the Home and did not again try to escape.

The Jarawas would not touch rice, or any of the rations supplied to the Andamanese, nor would they smoke. They were fed on yams, fish, pig's flesh, when it could be obtained for them, and crabs. They cooked their food very thoroughly before eating it. They were very fond of coconuts, when they were given them, and had evidently eaten them before. They drank water, but did not care for either milk or tea. They did not like sugar or anything sweet. They would not touch honey from the Andamanese store, which had fermented slightly, but liked fresh honey in the honey-comb. The friendly Andamanese could not understand a word of the Jarawa language nor could the Jarawas understand the Andamanese; they made themselves understood to a certain extent by signs. While the captives were at Port Blair they only learnt what we believe to be their names and a few words for the food they eat.

000

The Jarawas were quite friendly and evidently felt that they would be well treated. Mr. Bonig and myself went to see them almost every evening while they were in Port Blair and took them out for walks, and they looked forward to our visits and the women usually took our arms, while the children clung to us. While they were in Port Blair we took them over Ross, Phoenix Bay Workshops and Chatham Sawmills. They evinced no astonishment at what they saw, but some fright. They do not seem capable of evincing pronounced emotions of any kind, either of grief or astonishment or pleasure. On

000 the 10th March I took the Jarawas to see the two companies of the West Riding Regiment fire at the Ranges. We first went to the firing points and saw volleys fired from 1,700, 1,500 and 1,100 yards, and then went into the butts while the men fired at and broke a gurreah filled with water and put bullets through a kerosine oil tin and through a hat. I showed them all this carefully and they thoroughly understand what a rifle can do and that it causes death. When we landed the Jarawas at Dum-la-Chorag I killed a flying-fox which flew over the boat as we were rowing up the creek, and showed them the shot holes in it and they examined these carefully and must now associate death with the discharge of a gun.

The Jarawas also visited Lamba Line Village and were hospitably entertained by the (Native Indian) villagers, who clothed them and entertained them with music. The Jarawas and villagers passed their babies from one to another, and evidently enjoyed themselves, as they laughed and talked and seemed quite pleased.

On the evening of the 10th March I took some photographs of the Jarawas. On the 11th March Mr. Bonig and self took the two women, two babies and four girls back to Pochang, keeping the two boys, as ordered, here. The boys were very sorry to leave their parent. They were brothers. We took the Jarawas to the Duratang Andamanese Home on Kyd Island on the way. Before leaving the women at Pochang we made signs to them that we would bring the two boys back to the place where we left them.

APPENDIX D.

MR. M. V. PORTMAN'S REPORTS OF THE FIRST DEALINGS WITH THE
ONGES IN 1886.

In accordance with instructions, I left Port Blair in the steamer *Ross* on the 27th October 1886, having No. 1 lighter, and a 10-oared boat in tow. Six convicts and 27 Andamanese accompanied me, and I had rations for three months for the entire party. 000

I arrived at the Little Andaman Island on the 28th October, and anchored in Bumila Creek. For the next three days we were engaged in making a small clearing on the east bank of the creek, and housing the party. The little Andamanese from the neighbouring huts came down daily to visit me, and were very friendly. I heard with regret that the little boy Api I had left with the Ekudi tribe in April 1886 was dead, but the remainder of those people who had lived with me in Port Blair, all came to my camp. Women and children now came fearlessly to the camp, and the first difficulty I met with was that of preventing the savages from looting the camp of everything they fancied. By making an example of one of the first cases that occurred, and treating the delinquents somewhat roughly, I soon got them to understand that they were only to have what we gave them, not all they saw, and from that time, with two exceptions to which I shall refer later, I have had no trouble. I have been very lavish of presents to all the people.

Very stormy weather began just after my arrival, and I therefore confined my work to going about amongst the neighbouring villages and endeavouring to gain influence over these people, and to learn their language. The Andamanese I had brought with me were occupied in turtling, canoe cutting, etc., and I encouraged the Little Andamanese to go amongst them and associate with them. They soon took to swimming off on board the steamer or coming in their canoes to visit me, and occasionally brought me baskets of dried fish as presents. On November 3rd three men, whom I afterwards found belonged to the south coast of the Island, paid me a visit, and were very pleasant.

On the 12th November I tried to go down the coast in the *Ross* and cross to the South Sentinel Island, but the weather was so bad that I was obliged to put back. The Little Andamanese with me gave me the name of the South Sentinel Island "Kelagagai," but said that they had never been there. On the 13th I coasted down to Tokaini and saw all the people there. They received me in an unconcerned way and appeared to take little interest even in the presents we had brought. I learnt that the man captured at Jackson Creek in January 1885, who afterwards died in Port Blair, was from the Tokaini village, and that his real name was Taleme.

On the 15th very heavy rain commenced, and on the 15th a cyclone set in, which lasted till the 20th. With the exception of the loss of her side curtains the *Ross* sustained no damage. I had both anchors down and hawsers passed outside all. Until the 18th I was unable even to get ashore on the bank of Bumila Creek, where we were anchored, and the convicts and Andamanese suffered very much. The clearing was 18 inches under water, and the people were living on raised machans they had made. All the Andamanese huts had been blown down, but the tents, being more sheltered, had stood. It would have been dangerous to have gone further into the jungle, owing to the falling branches of trees, and on the sand one could not stand up to the wind, but had to crawl along. Much damage was done in the jungle, quantities of dead fish were washed up on the coasts, and many birds and bats seem to have been killed. The Little Andamanese seem to have suffered much from the cold and want of food, and several sick whom I had seen at Tokaini on the 13th had died. As soon as the cyclone was over many people came to me for food. The rain was so heavy that the creek was running with fresh water down to the mouth. After this storm the place seemed to become unhealthy, and from that time onward there has been a great deal of sickness amongst the Andamanese and convicts. I did not suffer much myself until January.

Owing to the heavy sea on outside I was unable to go anywhere until the 24th, and the Andamanese continued cutting boats and catching turtle. On the 24th I visited Jackson Creek. The landing here was very difficult owing to the surf, and our boat was swamped. It is impossible to enter the creek as the sand has now silted up so much, and I landed on the north side of it. Several people met us and were given presents. I walked along the shore with them for some distance, and visited some sandstone caves, in which were the grass variety of edible birds'-nests. All the water here contains much lime, and stalactites are formed in the caves.

On the 26th I was visited by Her Majesty's I. M. S. *Kwangtung*, the Commander supplying me very kindly with such rations, etc., as I required. On the 29th I walked down the coast from Jackson Creek to Api Island and went some way into the interior. The people received us in a friendly manner, but were very greedy for presents, taking every thing they saw, not only out of the boats but even from the persons of my Andamanese and seizing many articles which could be of no possible use to them. This behaviour I checked with the help of the interpreters I had brought down from Bumila Creek, and the people soon began to obey my directions.

Much sickness having now set in, I came up to Port Blair with the worst cases on the 1st December. There was a heavy sea on and the *Ross* had a good opportunity of

000 showing what a fine sea boat she is. Two little Andamanese from the Ekudi village accompanied me, one of whom, Kogio Kai, had been in Port Blair before as a captive in 1885. On the 4th December I returned to the Little Andaman (arriving there on the 5th) with some fresh convicts and Andamanese. The weather on the way back was even worse than what we had coming up.

My absence, leaving a small party of convicts and Andamanese on the Island, had been a good test of the work done, and I found on my return that the Little Andamanese had been living with them in my camp in the most friendly manner.

I was kept in the creek by bad weather until the 12th December, during which time the crew of the *Ross* were employed in cutting firewood in order to save our coal, and the convicts and Andamanese went about with me inland and on the coast to the various villages.

I also commenced a coast line survey of the Island with prismatic compass and chain. The Little Andamanese or Onges, as they call themselves, were constantly in camp and began to pick up a little Hindustani.

On the 12th and 13th I worked along the coast, surveying down to Tochagedu, where my work was stopped by the heavy surf, so I began on the 15th to work E. and S. from the North Point of the Island. A curious incident occurred on the 17th which will illustrate the influence I have acquired over the neighbouring people. Kogio Kai told me that a man of his own tribe had stolen some knives belonging to us. I sent for the man, admonished him and forbade him to come to the camp. Tahlai, one of his own tribe, then escorted him to Tambe Ebui, and he has not since been allowed to visit us. The Ekudi people on another occasion behaved in a similar manner to the Palalankwes who had stolen some turtle spears, refusing to allow them to land near the clearing or visit us for several days.

By the 19th of December I had surveyed as far as Titaije, meeting many people of all sizes and sexes who were very pleasant and friendly, and I then returned to Bumila Creek, beached the *Ross*, cleaned and painted her. Her Majesty's I. M. S. *Neacorey* called on the 21st, and on the 22nd I proceeded to Port Blair with the sick from my camp, and with nine Onges picked from the following tribes:—Ekudi, Palalankwe, Tokai, Tambe, Ebui and Titaije.

I remained in Port Blair until the 27th when I crossed with the party to the North Sentinel Island. The Onges gave me their name for it as Chirtakwekwe, and appeared well acquainted with it. They walked fearlessly about in the jungle, but, on catching some of the inhabitants on the evening of the 27th, it was found that they talked an entirely different language. On the 28th I visited Port Mout, returning to Port Blair on the 29th, and on the 2nd January I returned to the Little Andaman.

During their stay in Port Blair, the greatest care was taken that the Onges should not suffer in health, and they were shown every thing I thought would interest them, including the athletic sports and the military parade on the 1st January, and were also given quantities of presents, being allowed to have almost every thing they fancied, and were given appeared so delighted with their visit that, on the way back, they said they would come up to Port Blair in their canoes in the fine weather.

On the 3rd January I started down the East Coast surveying. In addition to my party I was accompanied by Tomiti, Tahlai and Kogio Kai, who were of the greatest assistance. People came out to meet us at each village, and every one was quiet, friendly and pleasant. On the 4th I anchored in Daogule Bay, having been accompanied by nearly fifty people all along the coast. On the 5th I met at Toi-balewe, Nátidétotai Kégé, one of the women who was captured on the Cinque Islands in 1885. On the 6th I met at Ingoie, on the South Coast, the three men who had visited me at Bumila Creek on the 3rd November last. I completed the survey on the 7th closing on Api Island, and then returned to Bumila Creek.

The weather now got stormy again, and I began to suffer very much in health. The survey being finished, I having visited all the villages round the Island and being on the best terms with all the people, and our stores being nearly exhausted, I returned to Port Blair on the 19th January with the entire party. The work I was sent down to do has, I think, been accomplished, and we are now on as friendly terms with the Little Andamanese as we are with the inhabitants of the North Andamans.

619
184 From what I can learn, I am of opinion that, while the whole of the Little Andaman Island is peopled by one race calling themselves Onges, these people are sub-divided into tribes who adhere more or less to their own country, and who appear to quarrel and fight among themselves. What little I have learnt of their language I have embodied in my work on the languages of the Andamanese, written at your request, but the amount is small. It differs almost totally from any language with which we are acquainted, except that of the Jarawa tribes.

The people appear healthy, their principal diseases being chest complaints, coughs and colds, fever and itch. There is no syphilis amongst them, and in physique they compare favourably with the inhabitants of the Great Andaman.

Their manners and customs differ somewhat from those of our people, the principal differences I have noticed being the following:—

The large circular huts built by them; the raised charpoys on which they sleep; their habit of cooking, drying and storing in baskets a small fish similar to a sprat; the difference in the shape of their canoes at the bow and stern; the difference in their ornaments,

and the absence of bone necklaces and broad tasselled belts amongst them; the women wear a tassel of a yellow fibre in the place of the leaf worn in the Great Andaman; the difference in the shape of the bow, which is of the European pattern. The arrows used for fish frequently have four heads of different lengths fitted into one shaft.

The people are by no means expert in the use of a canoe in the rough water, and are unable to harpoon turtle. They paint their hair only with red earth, and not their entire bodies, and they do not allow their hair to grow long; the women do not keep their heads clean shaved.

Their staple food appears to be the seed of the mangrove, boiled, as that article of diet is always to be seen in their huts, supplemented of course by whatever else they can get.

I may here mention that, after close and continued observation of their habits, I entirely disbelieve the legend that they were formerly in the habit of visiting the Car Nicobar Island.

It was very pleasant to see the numbers of healthy children of both sexes in the various villages; the people seem to marry later in life than do the Great Andamanese, but the same system of monogamy prevails.

The music of their songs is different and more pleasing, and it is not accompanied by clapping of hands, or striking of a sounding board. Their dance is peculiar and unlike that of the other Andamanese.

They have no religion of any kind, and I have learnt nothing of their traditions or superstitions from which they seem even freer than our people.

In conclusion I may say that the people are by no means fierce, being if anything of a milder disposition than our people, and I became very much attached to them, which attachment is, I think, returned. They are easily silenced or frightened, and are in great dread of a gun.

The Island at the north end appears to consist of mangrove swamp, and low belts of sandy soil on which the aborigines live. On the west and south-west coast the land rises into low hills of a coarse sandstone, running more or less north and south. The timber appears to be much the same as that of the South Andaman, and the rocks are chiefly lime and sandstone with a good deal of actual coral rock on the east and south coast. In one place on the point south of Daogule Bay I noticed an outcrop of igneous rock. There appeared to be no minerals.

The products of the sea appear to be the same as at the Great Andaman, but that the Tabiporine family of coral, particularly *Tabipora musica*, occurs in profusion. Dugong and turtle abound in the sea, and I captured two of the former, one being a remarkably fine specimen, and many of the latter.

The Onges are very fond of turtle which they are unable to get with the facility with which our Andamanese catch them, as they are ignorant of the use of the harpoon, and turtle always formed a great part of my presents to them.

In rough weather landing is almost impossible on most of the coast, and in calm weather there are heavy ground swells and tide rips. The following are the best anchorages of small vessels:—Bumila Creek; Eketi Bay, just inside the north end of Nachure Point; Gijenge, opposite Ingoie, about half a mile from shore; Hut Bay; Daogule Bay and Obata. Landing is difficult in most places and I always used an Andamanese canoe.

With regard to their (the Onges) behaviour to shipwrecked crews, I am of opinion that the crew of any native vessel wrecked there would still be liable to be massacred, and though a European, if wrecked on the north coast might be well treated. I should not like to guarantee his safety. Shipwrecked sailors are rarely diplomats and would be extremely likely to resent the looting of their ships or persons in a manner which would certainly lead to their being shot. This looting cannot be prevented, the temptation being too great for any savage, however tame, and the general education of the Onges will take some years. It is quite safe for any Settlement official to visit the Island and land. I would advise him first to land at Bumila Creek and take on board either Kogio Kai, Tomiti or Tahlai, or else one of the following:—Wana Luege of the Ekudi tribe or Kogio Kokele of Palalankwe village, who would act as interpreters at any other part of the island, where he wished to land.

The presents which the Onges most appreciate are hoop iron, rod iron, files, sleeping mats, coconuts, plantains, beads, and specimens of the articles used by our Andamanese; also turtle, which can easily be got at the South Sentinel Island. The Onges are, I believe, quite willing to come to Port Blair in their canoes in the fine weather, but great care should be taken that they do not contract any disease, particularly syphilis, if they do come up. They will take to smoking kindly, but I have not encouraged this, as my aim is to keep them in their healthy primitive state, and I believe this can be done, and they can still be brought to obey our orders and remain on friendly terms with outsiders. We require very little of them, and a close intercourse with these savages means death to them.

On the 4th March the Chief Commissioner, accompanied by Lieutenant-Colonel Roberts, 7th Regiment, Madras Native Infantry, Mr. Portman, on special duty at the Little Andaman Island, Mr. Metcalfe, Officer in charge of the Andamanese, and a number of Andamanese, left Port Blair in the steamer *Ross* at 6 a.m., and arriving in Bumila Creek, north end of the Little Andaman at 2 p.m. Some of the Onges, as the natives of the Island

619
184

000

000 call themselves, visited us at once, and our old friends Tomite, Tahlai, Wana Luege and Kogio Kokele were taken on board as interpreters.

On the 5th we proceeded along the north coast, taking on board Kogio Kai off Kuai-chikuada Creek. After inspecting the Ariel Ledge, we anchored at 10-30 a.m. off the mouth of the Tiyai Creek on the East Coast. Several Onges of both sexes were on the shore, and we landed amongst them, giving them presents. They were quite friendly, and we visited their hut at Titaije. In the evening we rowed up the Tiyai Creek, which is one of the most beautiful in this group of islands and had not been before explored. All our Andamanese remained on shore for the night with the Onges and had a feast of turtle.

On the 6th none of the Onges were seen, although we landed in two places, and we anchored for the night in Hut Bay on the East Coast.

On the morning of the 7th two men appeared and were given presents, and we then went on to Toihallowe, a large hut on the south-east corner of the Island, measuring 60 feet in diameter and about 35 feet in height. Shortly after we landed, a number of Onges made their appearance and were given presents. I walked to a village of 14 lean-to huts a little way in the interior, and my party were regaled with pig and honey. As usual amongst these people, there were a few ill-tempered, conservative old men, who refused to be pleased with us. Our interpreters decided to walk on round the coast, and meet us at Ingoie on the South Coast, and I brought on board two new men, sending them on shore again when we reached Ingoie that afternoon. There is a good landing place here, the reef being broken in one place, just opposite the hut. The best anchorage is in 8 fathoms, about half a mile from the shore.

In the evening we visited the rock where Lieutenant Much's expedition landed in 1867, and the Onges appeared to have some remembrance of it.

My Andamanese slept ashore as usual with the Onges, a number of whom had followed us round. On the 8th Her Majesty's I. M. S. *Kwangtung* arrived with Lieutenant-Colonel Strahan and his survey party, and Mr. Man, Officer in charge Nicobars. The survey work was at once commenced. The Onges were rather troublesome, trying to steal the metal of the instruments, but no fracas took place, and with the presents we had given them they were quite pleased.

On the 9th the Chief Commissioner, with Lieutenant-Colonel Strahan, Mr. Man and Mr. Metcalfe went to the north end of the Island for the day in the *Ross* to observe for latitude, and Lieutenant-Colonel Roberts and I remained behind in the *Kwangtung*. Mr. Senior, Assistant Surveyor, with his party landed at 8-30 a.m. at Ingoie, and attended by the Andamanese, our Onge interpreters, and two canoes with presents, proceeded to survey the coasts round to Ingotijalu on the south-west Coast. The canoes with the presents were swamped in the surf, and one canoe and all the presents were lost. The Onges, however, beyond being greedy for such metal as they saw, gave no trouble, and Mr. Senior, having completed his work, came off at 4 p.m. to the *Kwangtung*, which vessel after looking for the shoal marked in the chart as being about 4 miles south-west of the south-west end of the Island, and finding that it did not exist (the broken sea being really caused by a tide rip), had anchored off Ingotijalu. Mr. Eldridge and Mr. Baynes had been ashore bathing from a Nicobarese canoe, and some Onge women had joined them in the water and seemed quite friendly.

At 5 p.m. I landed with Captain Pryce, I. M., Lieutenant-Colonel Roberts, and Mr. Murray, Chief Engineer of the *Kwangtung*. I had with me as an interpreter Kogio Kai, and two of our Andamanese, Reala and Dukla. Unfortunately I had no presents, they having been lost in the canoes. We were received on the shore by about 25 people, among whom were many women and children, and they were all unarmed except two men who had adzes. They were very greedy for presents and tried to loot the boat, but were prevented by Kogio Kai and myself. Mr. Murray, however, gave them an iron bucket, which they had taken and I had recovered from them. They embraced Kogio Kai, and we all walked along the shore together taking two *khalasis*. After we had proceeded about 200 yards, Captain Pryce drew our attention to some fish on the beach, and he with Lieutenant-Colonel Roberts and Mr. Murray stopped to look at them. I was a few paces behind talking to the Onges by whom we were surrounded. Suddenly I heard a thud, and Mr. Murray cried out 'I am killed.' I turned and saw Mr. Murray on his knees on the sand, the blood streaming from a wound on the back of his head, and a tall Onge standing just behind him with a large adze in his hands. The attack was quite an unprovoked one, and from the fact that the women and children were present and none of the other Onges were armed, I consider it to have been unpremeditated and without the approval of the others, who immediately began to retire. Kogio Kai called to me to shoot the Onge, but none of us had any arms, and we all went off to the boat. Captain Pryce and a *khalasi* supporting Mr. Murray, and Colonel Roberts waiting in the rear to see if the man was going to attack us again. He did not attempt to do so, and the Onges all went and sat down at the landing-place. We returned to the *Kwangtung*, and I asked Captain Pryce to arm all the Europeans and place them at my disposal. He did so and ordered away two boats. I also took with me Tomiti, Tahlai, and Kogio Kai. On nearing the shore, I sent Tomiti and Tahlai to see if the man who hit Mr. Murray was still there. Colonel Roberts, who kindly consented to take charge of the armed party, covered them from the boat.

They talked to the women for a minute, and then called out to me that the man had run away. I, however, saw a man with an adze in his hand sitting on the right, away from

the others, and I asked Kogio Kai if this was the man. He said it was and called out to Tomiti, who with Tahlai seized the man and dragged him into the boat, having first snatched the adze out of his hand. None of the other Onges attempted to rescue him or to offer any resistance. Our prisoner was secured and taken on board the *Kwangtung*. The Chief Commissioner, who had meantime returned in the *Ross*, directed me to have the man tied up to a gun and given twenty-four stripes, which was accordingly done. He was then secured and taken to the *Ross*. Mr. Murray, under the charge of Mr. Jackson, apothecary of the *Kwangtung*, was also taken on board the *Ross* for the purpose of being conveyed to Port Blair for medical treatment, his wound being a serious one, the *Kwangtung* returning to the Nicobars. ddd

On the following morning six Onges appeared on the beach, and I sent Tomiti and Tahlai ashore with some presents for them, and to explain what had been done to the prisoner and that we intended to take him to Port Blair.

We then proceeded to Jackson Creek on the West Coast, where the Chief Commissioner and Mr. Metcalfe landed and gave some presents to the Onges, and we then went on into Bumila Creek where we anchored for the night. Our interpreters were landed here and loaded with presents, and on the 11th we returned to Port Blair, bringing with us the prisoner, whose name proved to be Kobédá Ráté, an inhabitant of Gajégé, a village on the south-west coast of the Little Andaman.

Until the interpreters left he did not seem to realize his position, but during the night of the 10th after they went away, he twice managed to free his hands from the handcuffs, and once, although his feet were manacled together, slipped overboard and tried to swim on shore, but was at once caught by one of our Andamanese. He is now living under the Chief Commissioner's house guarded by Andamanese and seems fairly well. It would, in my opinion, be advisable, should he continue in good health, to keep him for some months in Port Blair, until he has learnt to obey our orders and appreciate our power.

CHAPTER IV.

THE LANGUAGES.

- I. GENERAL DESCRIPTION.—Philological Value—Savage Nature—Agglutinative—Samples of Minuteness in Detailed Terms—Specimens of Andamanese Method of Speech.
 - II. GRAMMAR.—History of the Study—The Theory of Universal Grammar—The Position of the Andamanese Languages in the General Scheme—Examples of Sentences of One Word—Elliptical Speech—Portman's Fire Legend in the Bas Version dissected to illustrate Grammar—Subject and Predicate—Principal and Subordinate Words—Functions of the Words—Order of Sentence—Order of Connected Sentences—Interrogative Sentences—Mode of expressing the Functions and Interrelations of Words—The Use of Affixes; Prefixes, Infixes, Suffixes—Differentiation of Classes of Words—Indication of Classes—Qualitative Affixes—Composition of the Words—Agglutinative Principle—Identity of the Five Languages of the Southern Group of Tribes.
 - III. ETYMOLOGY.—The Use of the Roots—Anthropomorphism Colours the whole Linguistic System—The Use of the Prefixes to Roots—To Words denoting the Human Body—To Words referring to the Human Body—The Prefix of Intimate Relation—The Prefix System—Prefixes to Words relating to Objects—General Senses of the Prefixes to Roots—The Use of the "Personal Pronouns"—Limited Pre-infixion—Limited Correlated Variation (Concord)—Expression of Plurality by Radical Prefixes—Qualitative Prefixes—Functional Suffixes—Functional Suffixes are Lost Roots: attempt at recovery.
 - IV. PHONOLOGY.—The Voice of the Andamanese—History of the Reduction of the Language to Writing—Peculiarities of Speech.
 - V. THE NORTHERN AND OUTER GROUPS.—Proof of the Identity of the Northern and Southern Groups of Languages—The Outer Group (Onge-Jarawa) examined—The Limited Knowledge of it—Recovery of Colebrooke's Jarawa Vocabulary, 1790—Proof of its Identity with the Other Group—Derivation of "Minicopie."
- APPENDIX A.—The Theory of Universal Grammar.
 APPENDIX B.—An Onge Vocabulary.
 APPENDIX C.—The Fire Legend in the Bojigigiji Group.

I. GENERAL DESCRIPTION.

193 Philological Value.—The Andaman Languages are extremely interesting from the philological standpoint, on account alone of their isolated development, due to the very recent contact with the outer world on the part of the speakers. Of the speech of the only peoples, who may be looked upon as the physical congeners of the Andamanese,—the Samangs of the Malay Peninsula and the Aetas of the Philippine Archipelago,—no *Vocabulary* or *Grammar* is available to me of the latter, and the only specimens of the Samang tongue I have seen bear no resemblance or roots common to any Andamanese Language.

The Andamanese Languages exhibit the expression only of the most direct and simplest thought, show few signs of syntactical, though every indication of a very long etymological, growth, are purely colloquial and wanting in the modifications always necessary for communication by writing. The Andamanese show, however, by the very frequent use of ellipsis and of clipped and curtailed words, a long familiarity with their speech.

The sense of even Proper Names is usually immediately apparent, and the speakers invariably exhibit difficulty in getting out of the region of concrete into that of abstract ideas, though none in expanding or in mentally differentiating or classifying ideas, or in connecting several closely together. Generic terms are usually wanting, and specific terms are numerous and extremely detailed. Narration almost always concerns themselves and the chase. Only the absolutely necessary is usually employed and the speech is jerky, incomplete, elliptical and disjointed. Introductory words are not much used and no forward references are made. Back references by means of words for that purpose are not common, nor are conjunctions, adjectives, adverbs and even pronouns. An Andamanese will manage to convey his meaning without employing any of the subsidiary and connecting parts of speech. He ekes out with a clever mimicry a great deal by manner, tone and

action; and this habit he abundantly exhibits in the form of his speech. His narration is, nevertheless, clear, in proper consecutive order and not confused, showing that he possesses powers of co-ordination. 193

Savage Nature.—The general indications that the Languages give of representing the speech of undeveloped savages are confirmed by the intense anthropomorphism exhibited therein. As will be seen later on, the Andamanese regard not only all objects, but also every idea associated with them, as connected with themselves and their necessities, or with the parts of their bodies and their attributes. They have no means of expressing the majority of objects and ideas without such reference; e.g., they cannot say "head" or "heads," but must say "my, your, his, or ———'s, this one's, or that one's head" or "our, your, their, or ———'s, or these ones', those ones' heads."

But though they are "savage" languages, limited in range to the requirements of a people capable of but few mental processes, the Andamanese Languages are far from being "primitive." In the evolution of a system of pre-flexion in order to intimately connect words together, to build up compounds and to indicate back references, and in a limited exhibition of the idea of concord by means of post-inflexion of pronouns, they indicate a development as complete and complicated as that of an advanced tongue, representing the speech of a highly intellectual people. These lowest of savages show themselves to be, indeed, human beings immeasurably superior in mental capacity to the highest of the brute beasts.

Agglutinative.—The Andamanese Languages all belong to one Family, divided into three Groups, plainly closely connected generally to the eye on paper, but mutually unintelligible to the ear. They are agglutinative in nature, synthesis being present in rudiments only. They follow the general grammar of agglutinative languages. All the affixes to roots are readily separable, and all analysis of words shows a very simple mental mechanism and a low limit in range and richness of thought and in the development of ideas. Suffixes and prefixes are largely used, and infixes also to build up compound words. As with every other language, foreign words have lately been fitted into the grammar with such changes of form as are necessary for absorption into the general structure of Andamanese speech.

Samples of Minuteness in Detailed Terms.—The following are examples of the extent to which the use of specific terms to describe details of importance to the Andamanese is carried by them.

Stages in the growth of fruit:—*Oldereka*, small: *chimiti*, sour: *putungaij*, black: *chehada*, hard: *teleich*, seed not formed: *gad*, seed forming: *gama*, seed formed: *tela*, half-ripe: *wuwakel*, ripe: *roichada*, fully ripe: *olyohda*, soft: *chorure*, rotten.

Stages of the day: *Waingala*, first dawn: *elawanga*, before sunrise: *bedola dootings*, sunrise: *litti (dila)*, early morning: *bedola kaganga*, morning: *bedola kagaga*, full morning: *bodo chawag*, forenoon: *bode chaw*, noon: *bedola loringa*, afternoon: *bode l'ardiyaaga*, full afternoon: *elardiyaaga*, evening: *dila*, before sunset: *bedola letinga*, sunset: *elakadanga*, twilight: *elaryitings*, dark: *gureg chaw*, midnight.

Specimen of Andamanese Method of Speech.—The following account of a story, abstracted from Portman, of an imaginary pig hunt as told by a *Bea eremtaga* (forest-man) for the amusement of his friends, will go far to explain the Andamanese mode of speech, and the form that its Grammar takes.

The narrator sits on the ground, facing a half circle of lounging Andamanese. After a short silence, he leans forward with his head bent down. Suddenly he sits erect with brightening eyes and speaks in a quick, excited way, acting as if carrying on a conversation with another person. "After how many days will you return?" And then answering as if for himself: "I will come back to-morrow morning, I am off pig-hunting now." A pause. "I am going." Very suddenly. "You stay here." Moving as if going away. "I am going to another place." Squeaking like a young pig with pantomime of shooting it. "It is only a little pig. I will take it to the hut." Moving his shoulders as if carrying. "They roasted it there." Wave of the hands signifying that the pig was of no account. Pause. "I started in the early morning after a big one,—a big pig." Motions of hands to show length and breadth of pig. To an imaginary friend. "I will sharpen pig arrows to take

193 with me. Come after me and we will hunt together." Imitation with the hands of a pig running, shooting arrows, slap on the left breast, squeals of several wounded pigs, and so on. A pause. "You take them in front of me." Directions by pantomime to other persons as to the pigs. "They were cooking them for me in the hut, cooking them well." Brightens up and begins again. "I will bring several more." Pretends to listen. "We have got them. The dogs are barking." And so on for hours.

The actual expressions for such a story are :—

Es	bichika	aria—P—eats	ngo	on ?	Waiags—len	do	on .	Na	do	reg
How	many	day—past	you	come?	Morning—in	I	come.	Now	I	pig
dele.		Kam	wai	del.						
hunt.		Away	indeed	I .	Kam	wai	do	on		D'—arlog—len
as .		Wai	do	jalo—ks.	Reg—ks					Me—behind—in
there.		Indeed	I	go—away—do.	Pig—little.					
		Wai	ks	eda	otjoi .	Do				
Indeed		there	they	roasted.	I	(in—the)—early	morning			
doga.		Do	do	Pigjit—ks.	D'—okanumu—ks.					
big .		I	pig—arrow	sharpen—do.	I—go—do.					
Do—ag'—igdele.		D'—okotolema	ik	on .	Wai	d'a—be	otjoi—ks			
I—you—hunt .		Me—before	take	come.	Indeed	me—for	cooking—were			
hut—len.		Tun	reika—beringa—ks.	Na	do	ikpogi—ks.	Ikre	ks .		
hut—in .		Very	ripe—good—do.	Now	I	several—do.	Getting—were.			
		Wai	eda	ikracwa .						
		Indeed	they	barked .						

Nothing could show more clearly how "savage" the speech is in reality, how purely colloquial, how entirely it depends on concurrent action for comprehension. When the party, who were out with Mr. Vaux when he was killed by the Jarawas in February 1902, returned, they explained the occurrence to their friends at the Home in Port Blair by much action and pantomime and few words. The manner of his death was explained by the narrator lying down and following his movements on the ground.

II. GRAMMAR.

12/ History of the Study.—I have taken so large a share in the develop-
193 ment of the knowledge of the Andamanese tongue that a brief personal explanation is here necessary to make clear the mode of presenting it that now follows.

The first person to seriously study the Andamanese Languages and reduce them to writing was Mr. E. H. Man, and in this work I joined him for a time soon after it was commenced, and in 1877 we jointly produced a small book with an account of the speech of the Bojigngiji Group, or more strictly, of the Bea Tribe. We then worked together on it, making such comparisons with the speech of the other Andaman Tribes as were then possible and compiling voluminous notes for a Grammar and Vocabulary, which are still in manuscript. In 1882 the late Mr. A. J. Ellis used these notes for an account of the Bea Language in his Presidential Address to the Philological Society.

In compiling our manuscript, Mr. Man and myself had used the accepted grammatical terms, and these Mr. Ellis found to be so little suited to the adequate representation for scientific readers of such a form of speech as the Andamanese, that he stated in his Address that :—

"We require new terms and an entirely new set of grammatical conceptions, which shall not bend an agglutinative language to our inflexional translation."

And in 1893 he asked me, in a letter, if it were not possible "to throw over the inflexional treatment of an uninflected language."

The Theory of Universal Grammar.—Pondering, for the purpose of an adequate presentation of Andamanese, on what was then a novel, though not an unknown, idea, never put into practice, I gradually framed a Theory of Universal Grammar, privately printed and circulated in that year. This Theory remained unused, until Mr. M. V. Portman compiled his notes for a

Comparative Grammar of the Bojigngiji (South Andaman) Languages in 1898, based avowedly, but not fully, on my Theory. These notes I examined in a second article on the Theory of Universal Grammar in the Journal of the Royal Asiatic Society in 1899, which again was subjected to the favourable criticism of Mr. Sidney Ray, who has since successfully applied it in outline to 16 languages, selected because unrelated and morphologically distinct, viz.—

- | | |
|--|--|
| 1. English. | 10. Nuxu, Dutch New Guinea. |
| 2. Hungarian. | 11. Motu, British New Guinea. |
| 3. Latin. | 12. Mortlock Islands, Caroline Group. |
| 4. Khasi, Hills of N. E. Bengal. | Micronesia. |
| 5. Anam, French Cochinchina. | 13. Motu, Banks' Islands, Melanesia. |
| 6. Ashanti, West Africa. | 14. Samoan, Polynesia. |
| 7. Kafir, South Africa. | 15. Awabakal, Lake Macquarie, Australia. |
| 8. Malagasy, Madagascar. | 16. Dakota, North America. |
| 9. Olo Ngadja or Dayak, South East Borneo. | |

With this brief history of the study of the Andamanese Languages, I will now give an exposition of the Theory so closely bound up with it as briefly and clearly as I can, in order to explain the method employed for exhibiting the peculiarities of Andamanese speech. A more detailed account, specially developed to a considerable extent for the present purpose, will be found in Appendix A.

All speech expresses a communication between man and man by talking or by signs. Languages are varieties of speech. The unit of every language is the expression of a complete communication, i.e., the sentence. All sentences are divided into incomplete expressions of communication, i.e., words, and are as naturally multiplied into languages. Thus there is a development both ways from the sentence.

The necessary primary division of every sentence made up of words is into the matter communicated (subject) and the communication made about it (predicate). The words in each of these divisions are of necessity in the relation of principal and subordinate, which involves the fulfilment of a function by every word.

The function of the principal word of the subject is obviously to indicate the matter communicated and of the subordinate words to explain the indication and illustrate that explanation. Similarly the principal word of the predicate indicates the communication made and the subordinate words illustrate the indication or complete it.

Therefore, in every language the essential words in a sentence are:—

- (1) indicator, indicating the subject or the complement,
- (2) explicator, explaining that indication,
- (3) predicator, indicating the predicate,
- (4) illustrators, illustrating the predicator or the explicator.

As all speech expresses a communication, it has a purpose, and the function of the sentences is to express one of the five following purposes:—(1) affirmation, (2) denial, (3) interrogation, (4) exhortation, (5) information. The methods adopted for indicating the purpose of a sentence are (1) placing the components in a particular order, or (2) varying their forms or the tones in which they are spoken, or (3) adding special introductory words. When the purposes of speech are by their nature connected together, this connection is naturally indicated by connected sentences in the relation of principal and subordinate, which is expressed by methods similar to those above noted, viz., placing them in a particular order, or varying the forms or tones of their components, or adding special referent words of two kinds, (1) simple conjoining words, (2) words substituting themselves in the subordinate sentence for the words in the principal sentence to which they refer.

The relation of the words composing the parts of a sentence is also expressed by the similar methods of adding special connecting words, or of varying the forms or tones of the words; and so, too, the intimate relation between indicator and predicator, indicator and explicator, illustrator and predicator, predicator and complement, referent substitute and principal, is similarly expressed by special connecting words, by correlated variation of the words in intimate relation, by their relative position, or by the tones used in severally expressing them.

Complete communication can be, and is habitually, in every language, made without a complete expression of it in speech, and so referent words are made to refer to words unexpressed and to be related or correlated to them, and referent substitutes are made to indicate the unexpressed subject or complement of a sentence.

The function of the sentence and the inter-relation of the words composing it are therefore in all speech expressed by three methods: position, variation, or addition of special words. Every language adopts one or more or all of these methods.

Therefore, in every language the optional words in a sentence are:—

- (5) connector, explaining the inter-relation of the components,
- (6) introducer, explaining its purpose,

121
193

(7) referent conjunctive, joining connected sentences.

(8) referent substitutes, indicating the inter-relation of connected sentences or unexpressed communications.

To the essential and optional components of the sentence must be added (9) the inter-fer, or word that of necessity in every language expresses in itself a complete communication, i.e., is a sentence.

Thus is explainable the natural resolution of the sentence into its component words, but any word can be and habitually is extended to many words, used collectively to express its meaning. Words thus used collectively form a phrase, which is substituted for its original. When a phrase contains in itself a complete meaning, and thus is a sentence substituted for a word, it becomes a clause. Therefore, clauses and phrases are merely expanded words, fulfilling the functions and bearing the relations of the words for which they are substituted in an expanded sentence or period. Therefore also, the period is a true sentence in the sense of being the expression of a complete meaning; and so the unit of every language adopting it.

In all speech words are made to indicate the functions they fulfil in a sentence by their position in it, with or without using tones and with or without variation in form, and this habit gives rise of necessity to classes of words according to function. And as any given word can naturally fulfil more than one function, it becomes as naturally transferable from its own class to another, the transfer being indicated by position in the sentence with or without variation in form or tone. The class of a word thus indicates its function, and its position, alone or combined with its form or tone, indicates its class.

So when a word is transferred from its original class, it necessarily fulfils a new function and becomes a new word, connected with the original word in the relation of parent and offshoot, each equally of necessity assuming the form or tone of its own class.

The functions of words in a sentence, and consequently their classes, are therefore in all speech expressed by two methods: position or position combined with variation. Every language adopts one or other or both.

When in any language connected words differ in form, they are made to consist of a principal part or stem and an additional part or functional affix. The stem is used for indicating the meaning of the word and the functional affix for modifying that meaning according to function, by indicating the class to which the word belongs or its relation or correlation to the other words in the sentence.

A simple stem necessarily indicates an original meaning, but a stem can be and habitually is used for indicating a modification of an original meaning. It then naturally becomes a compound stem, i.e., made up, by the same method as that above noted, of a principal part or root and of additional parts or radical affixes, each with its own function, the root to indicate the original meaning and the affix its modification into meaning of the stem.

As all words differing in form or tone of necessity fulfil functions and belong to classes, they must possess a nature, i.e., qualities inherent in themselves, and these, in all languages using such words, are indicated by the addition of qualitative affixes or by the tones in which they are spoken.

Every affix is of necessity fixed into the midst of, or prefixed or suffixed to, a root, stem or word, the affixing being naturally effected in full or in a varied form. Whenever there is variation of form amounting to material change, there is necessarily inflexion, or inseparability of the affixes. Inflexion can therefore be made to fulfil all the functions of affixes, and inflected words to conform to particular kinds of inflexion, in order to indicate function and class; and as tone can be equally made to indicate the functions and classes of words, it takes the place of inflexion.

Words are therefore made to fulfil their functions merely by the tone in which they are spoken, or by an external development effected by affixes, and to express modifications of their original meaning by a similar use of tones or of internal development. In both cases the affixes are prefixes, infixes or suffixes affixed in full or varied form or by inflexion. All languages, using variation of form for causing the components of sentences, i.e., words, to fulfil their functions, adopt one or other or all the above methods of effecting the variation.

Therefore in all speech, communication expressed in a sentence is rendered complete by the combination of the meaning of its components with their position, tones or forms, or with position combined with form or tone.

The methods adopted in developing the sentence, i.e., the unit of speech itself, are found to entirely govern those adopted in its further development into a language or variety of speech.

Languages differ naturally in the position of their words in the sentence, or in their forms or tones, or in the combination of position with form or tone. Thus are set up naturally two primary classes of languages:—Syntactical Languages, which express complete communication by the position, and Formative Languages, which express it by the forms of their words.

As position alone or combined with tone can fulfil all the functions of speech, the Syntactical Languages employ one or both of these methods, and thus are created respectively Analytical Languages and Tonic Languages.

Again, as in speech, variety of form is secured by affixes attached to words in an unaltered or an altered form. Formative Languages necessarily divide themselves into Agglutinative Languages, attaching affixes in an unaltered form, and Synthetic Languages, attaching them in an altered form. These two classes are both further naturally divisible into (1) Premutative, (2) Intromutative, (3) Postmutative Languages, according as they attach affixes as prefixes, infixes or suffixes.

In obedience to a fundamental Law of Nature, no language has ever developed along a single line, and therefore every language belongs of necessity primarily to one of the above classes, and secondarily to others, by partial adoption of their methods.

Languages, varying the form, tones or position, without varying the meanings of their words, form naturally Connected Languages in the relation of parent and offshoot. Connected Languages, whose stems, i.e., the meanings of whose words, are common to all, form a natural Group of Languages, and those Connected Languages, whose roots, i.e., the original meanings of whose words, are common to all, form a natural Family of Languages. Therefore also of necessity all Connected Languages belonging to a Group belong to the same Family.

As the above method of expounding the Theory involves the use of unfamiliar terms, it is as well to state that the new and the old terms of Grammar roughly, though not exactly, correspond as follow; it being remembered that the old terms are themselves the outcome of another tacit Theory, based upon other observations of natural laws or phenomena.

TABLE OF COMPARATIVE GRAMMATICAL TERMS.

Old.	New.
Noun.	Indicator.
Adjective.	Explicator.
Verb.	Predicator.
Adverbs of different classes.	{ Illustrator.
	{ Introducer.
Preposition. }	
Postposition. }	Connector.
Conjunction. }	
Interjection.	Integer.
Pronoun. }	
Relative Adverb. }	Referent Substituta.
Relative Particle. }	
Gender, Number, Case. }	
Declension. }	Inflection of different kinds.
Person, Mood, Tense. }	
Conjugation. }	
Concord, Agreement. }	{ Correlated Variation.
Government. }	{ Intimate Relation.

The two following diagrams will serve to explain the lines upon which the Theory works itself out :—

DIAGRAM I.

Principle of the Development of the Sentence out of its Components.

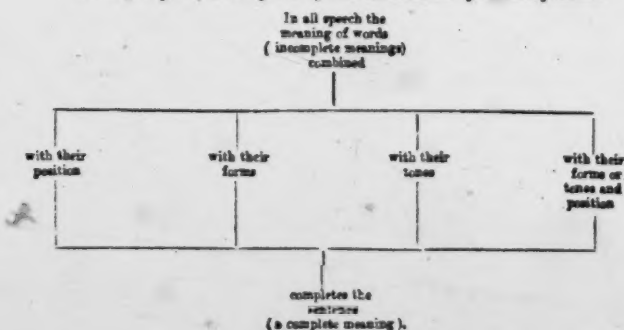
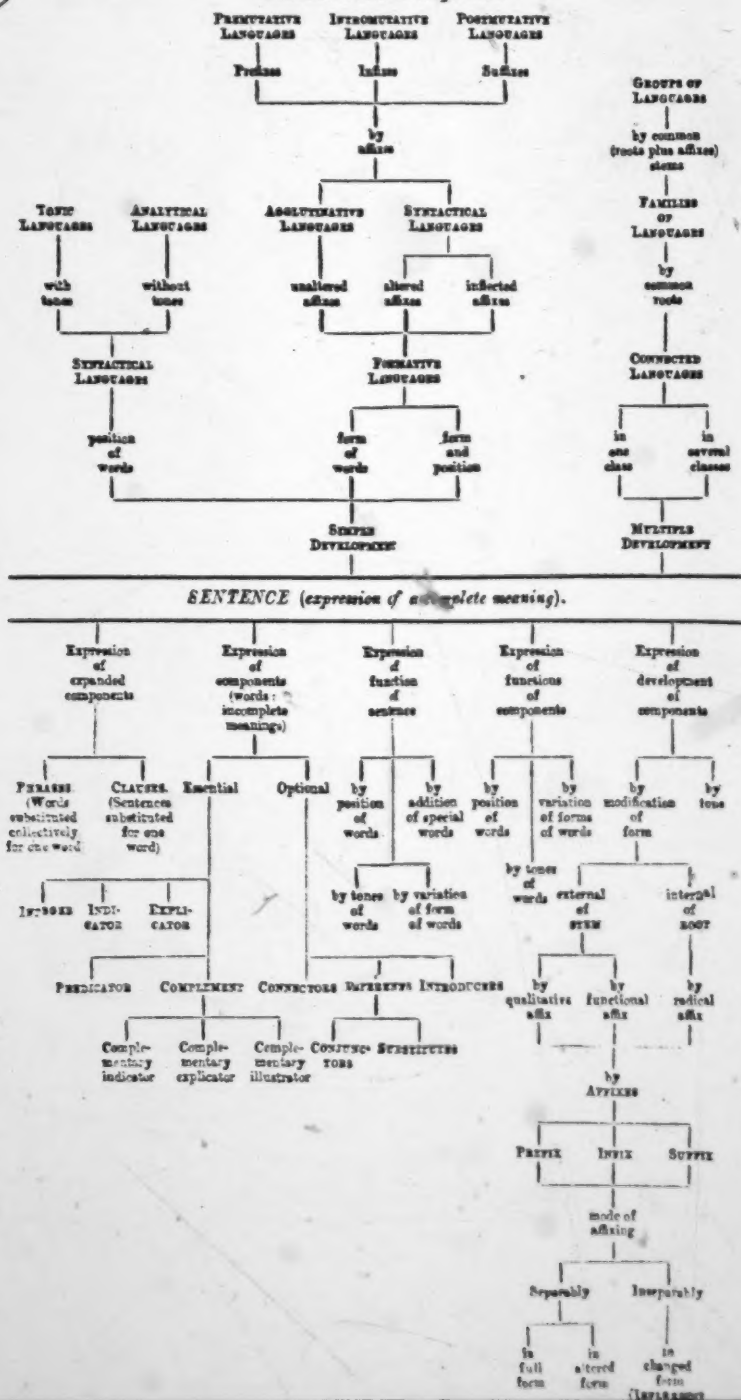


DIAGRAM II.

*Development of the sentence or complete meaning, upwards into languages.
downwards into its components.*



193

Position of the Andamanese Languages in the General Scheme.—

The next point for consideration is: Where do the Andamanese Languages come into the general scheme? This will be shown in the following general account of them, and as the grammatical terms used will be novel to the reader, the corresponding familiar terms will be inserted beside them in brackets, wherever necessary to make the statements clear in a familiar manner. Diacritical marks will only be used when necessary to the elucidation of the text.

Examples of Sentences of One Word.—The Andamanese Languages are rich in integer words, which are sentences in themselves, because they express a complete meaning. The following examples are culled from Portman's lists:—

TABLE OF INTEGER WORDS.

English	Bea	Malwa	Bojigya	Jawal
Hurrah.	Yui	Yui	Yui	Yui
I don't know.	Uchin	Maka	Konkete	Koien
Very well: go (with a lift of the chin).	Uchik	Kobais	Kai	Kai
Humbug.	Akanoi-yadake	Akanoi-yadake	Omkotichwake	{ Okamkoti- chwachin.
Oh: I say (ironical).	Betek	Ya	{ Kalahtata	Yokokene
It's broken.	Turushno	Turuit	Kalat	T'ruish
Back me up.	Jegô	Jegô	Jeklungi	Atokwe
Say 'yes.'	Kak	Kak	Kaka	Alô
Not exactly.	Cho	Ya	Aikut	Kene
Nonsense.	Wai (drawled)	Wai (drawled)	Kole	K'le
Yes (ironical).	Chunye	Chunye	Chunyeno	Chunye
What a stink.				
How sweet (smell, with a puffing out of the lips):	Pue	Pue	Pue	Pue
It hurts.	Eyi	Yi	Yi (drawled)	Eyô (indig- nantly).
Oh (shock).	Yite (with a gasp)	Yite	Yite	Jite
Don't worry.	Ijyomaingata	Idiyomaingata	Iramyclano	Bemjolokne
What? Where?	Ten?	Tan?	Dekot?	Alech?
Is it so?	An wai?	An yatya?	En kile?	An k'le?
Lo.	Kakatek	Kakate	Keleba	Alubai

Elliptical Speech.—Portman's *Vocabulary* shows that the habit of speaking by integers, *i.e.*, single words, or by extremely elliptical phrases is carried very far in Andamanese, and the *Fire Legends* themselves give the clearest instances of it, as these Legends have been recorded by Portman.

The Bea version winds up with the enigmatic single word "Tomolola," which has to be translated by "they, the ancestors, were the Tomolola." In the Koi version occurs the single-word sentence "Kôlotatke," *lit.*, "Kôlotat-ke," which has to be translated: "Now there was one Kôlotat." In the first instance, one word in the indicator (noun) form completes the whole sense; in the second, one word in the predicator (verb) form does so. Such elliptical expressions as the above and as the term of abuse, "Ngalgôrob" (*ng+ob+grob*, you+special—radical—prefix+spine), would be accompanied by tone, manner, or gesture to explain its meaning to the listener. Thus, the latter would be made to convey "You hump-back," or "Break your spine," by the accompanying manner.

Portman's Fire Legend in the Bea Version Dissected to Illustrate Grammar.—The Andamanese sentence, when it gets beyond an exclamation or one word, is capable of clear division into subject and predicate, as can be seen by an analysis of the sentences in a genuine specimen of the speech, Portman's "Fire Legend" in the five languages of the South Andaman (Bojigiji) Group. In the Bea Language it runs thus:—

BEA VERSION OF THE FIRE LEGEND.

Tel'-kô-tima-len (a Place)—in	Pulaga-la God	mani—ka. asleep—was.	Lurutot-la (a Bird)	etapa fire	tap—aga. steal-ing	emo—ce. bring-did.
etapa-la fire	Pulaga-la God	pagot—ka. burning—was.	Pulaga-la God	lei—ka. awake—was.	Pulaga-la God	etapa fire

193

eni—ks.	a ik	chapa-lik	Luratut	Pot-pagari-re.	jek	Luratut-le
seizing—was.	he	taking	fire—by	(Bird)	burn—t.	at-once (Bird)
eni—ks.	ai—Tarcheker	Pot-pagari-re.		Wota-Emi-baraijen—len	Change-tahanga	
taking—was.	he (a Bird)	burn—t.		Wota-Emi-village-in	The—ancestors	
oko—dol-re.	Tomolola.					
made-fires.	Tomolola.					

Portman's Rendering.—God was sleeping at Töl-l'okotima. Luratut came, stealing fire. The fire burnt God. God woke up. God seized the fire; He took the fire and burnt Luratut with it. Then Luratut took (the fire); he burnt Tarcheker in Wota-Emi village, (where then) the Ancestors lit fires. (The Ancestors referred to were) the Tomolola.

Subject and Predicate.—Taking this Legend, sentence by sentence, the subject and predicate come out clearly thus:—(P=predicate: S=subject.)

- (1) Töllokotimale (P) Pulugala (S) mamika (P.).
- (2) Luratutla (S) chapatapaga (S) omore (P).
- (3) Chapala (S) Pulugala (P) pagatka (P).
- (4) Pulugala (S) boika (P).
- (5) Pulugala (S) chapa (P) enika (P).
- (6) A (S) ik (S) chapalik (P) Luratut (P) lotpagarise (P).
- (7) Jek (P) Luratutla (S) enika (P).
- (8) A (S) Itarcheker (P) lotpagarise (P).
- (9) Wota-Emi-baraijen (P) Change-tahanga (S) okodale (P).
- (10) Tomolola (S) (P. unexpressed).

Principal and Subordinate Words.—That the words in the above sentences are in the relation of principal and subordinate is equally clear; thus:—

- (1) In the Predicate, *Töllokotimale* is subordinate to the principal *mamika*.
 - (2) In the Subject, *Luratutla* is the principal with its subordinate *chapatapaga*.
 - (3) In the Predicate, *chapa* is subordinate to the principal *boika*.
- And so on, without presentation of any difficulties.

Functions of Words.—The next stage in analysis is to examine the functions of the words used in the above sentences, and for this purpose the following abbreviations will be used:—

ABBREVIATIONS USED.

int.	intager.
in.	indicator.
e.	explicator.
p.	predicator.
ill.	illustrator.
c.	connector.
intd.	introducer.
r. c.	referent conjunctive.
r. s.	referent substitutive.
c. in.	complementary indicator.
c. e.	complementary explicator.
c. ill.	complementary illustrator.

In this view the sentences can be analysed thus:—

- (1) Töllokotimale (ill. of P.) Pulugala (in.) mamika (p.).
- (2) Luratutla (in.)—chapa—(e. in.)—tapaga (p., the whole an c. phrase) omore (p.).
- (3) Chapala (in.) Pulugala (c. in.) pagatka (p.).
- (4) Pulugala (in.) boika (p.).
- (5) Pulugala (in.) chapa (c. in.) enika (p.).
- (6) A (r. s., in.) ik (e.) chapalik (ill.) Luratut (c. in.) Potpagarise (p.).
- (7) Jek (r. c.) Luratutla (in.) enika (p.).
- (8) A (r. s., in.) Itarcheker (c. in.) lotpagarise (p.).
- (9) Wota-Emi-baraijen (ill. phrase of P.) changatahanga (in. phrase) okodale (p.).
- (10) Tomolola (in., P. unexpressed).

Order of Sentence.—By this analysis we arrive at the following facts. The purpose of all the sentences is information, and the Andamanese indicate that purpose, which is perhaps the commonest of speech, by the order of the words in the sentence thus:—

- (1) Subject before Predicate:
Pulugala (S) boika (P.).

193

In phrases, or words that are fundamentally phrases, the same method of intimately joining them is adopted.

Thus *Tel'-okotima-lea* means in practice "in *Tel'okotima*," a place so named, but fundamentally

Tel———P———okotima-lea

Tel (tree)———(no)———corner—in

means "in (the encampment at, unexpressed) the corner of the Tel (tree, unexpressed)." Here the intimate relation between *tel* and *okotima* is expressed by the intervening *P*.

The actual use of the phrases is precisely that of the words they represent. Thus—

Weta—Emi—baraij——lea

Weta—Emi—village——in

Here a phrase, consisting of three indicators (nouns) placed in juxtaposition, is used as one illustrative word (adverb).

Use of the Affixes: Prefixes, Infixes, Suffixes.—It follows from what has been above said that the Andamanese partly make words fulfil their functions by varying their forms by means of affixes.

Thus they use suffixes to indicate the class of a word, e.g., *la*, *re*, to indicate predicators (verbs); *la*, *da*, for indicators (nouns); *aga* for explicators (adj.); *lea*, *lik* for illustrators (adverbs). They use prefixes, e.g., *P*, to indicate intimate relation, and infixes for joining up phrases into compound words, based on the prefix *P*.

It also follows that their functional affixes are prefixes, infixes and suffixes.

It is further clear that they effect the transfer of a word from class to class by means of suffixes.

Thus, the compound indicator (noun) *Tel'okotima* is transferred to illustrator (adverb) by suffixing *lik*; indicator (noun) *chape* to illustrator (adverb) by suffixing *lik*; indicator (noun) phrase *Weta-Emi-baraij* to illustrator (adverb) by suffixing *lea*; predicator (verb) *top* (*-da*, *-re*) to explicator (adj.) by suffixing *aga*.

A very strong instance of the power of a suffix to transfer a word from one class to another occurs in the Kol version of the Fire Legend, where *Kilotat-le* occurs, *Kilotat* being a man's name and therefore an indicator (noun), transferred to the predicator (verb) class by merely affixing the suffix of that class. The word *Kilotat-le* in the Kol version of the Fire Legend occurs as a sentence by itself in the sense of "now, there was one Kilotat."

Differentiation of the Meanings of Connected Words by Radical Prefixes.—Fortunately in the sentences under examination, two words occur, which exhibit the next point of analysis for elucidation. These are:—

chapele Potugale pugat——la
fire God burning—was

and then

a Itatchekur Potpugari-re
he (a Bird) burn——t
a ik chape-lik Loratut Potpugari-re
he taking fire——by (Bird) burn——t

Here is an instance of connected words, one of which is differentiated in meaning from the other by the affix *ot*, prefixed to that part which denotes the original meaning or root (*pugat*, *pugari*) of both. Therefore, in Andamanese the use of radical prefixes (prefixes to root) is to differentiate connected words.

The simple stem in the above instances is *pugat* and the connected compound stem *otpugari*. Similarly *okotima*, *okodalre*, occurring in the Fire Legend, are compound stems, where the roots are *tima* and *dai*.

Indication of the Classes of Words: Qualitative Suffixes.—The last point in this analysis is that the words are made to indicate their class, i.e., their nature (original idea conveyed by a word) by the Andamanese by affixing qualitative suffixes, thus:

la, *re* to indicate the predicator class (verbs); *aga*, to indicate the explicator (adj.) class; *la*, *da* to indicate the indicator (noun) class; *lik*, *lea*, to indicate the illustrator (adverb) class.

Composition of the Words.—The words in the sentences under consideration can thus be broken up into their constituents as follows:—

Using the abbreviations R.=Root: S.=Stem: P. F.=prefix, functional: P. R.=prefix, radical: I.=Infx: S. F.=suffix, functional: S. Q.=suffix, qualitative.

- (1) Mami (S.)—ka (S. Q). So also pugut-ka, bei-ka, emi-ka.
sleeping—was.
- (2) Chapa (S.).
fire.
- (3) Tap (S.)—aga (S. Q.).
stool—ing.
- (4) Omo (S.)—re (S. Q.).
bring—did.
- (5) Chapa (S.)—la (S. Q.).
fire—(honorific suff.).
- (6) A (S.).
he.
- (7) Ik (S.).
tak—(ing).
- (8) Chapa (S.)—lik (S. F.).
fire—by.
- (9) I' (P. F.) of (P. R.) pugari (R.)—re (S. Q.).
(referent prefix)—bura—t.
- (10) Jak (S.).
at—omon.
- (11) Baraij (S.)—len (S. F.).
village—in.
- (12) Oke (P. R.)—dal (R.)—re (S. Q.).
—fire—(light)—did.

The Agglutinative Principle.—Words are, therefore, made to fulfil their functions in the Andamanese Languages by an external development effected by affixes, and to express modifications of their original meanings by a similar internal development. Also, the meaning of the sentences is rendered complete by a combination of the meanings of their component words with their position and form.

The sentences analysed further show that the Languages express a complete communication chiefly by the forms of their words, and so these languages are Formative Languages; and because their affixes, as will have been seen above, are attached to roots, stems and words mainly in an unaltered form, the languages are Agglutinative Languages. It will be seen later on, too, as a matter of great philological interest, that the Languages possess premutation (principle of affixing prefixes) and postmutation (principle of affixing suffixes) in almost equal development: intro-mutation (principle of affixing infixes) being merely rudimentary.

Identity of the Five Languages of the Southern Group of Tribes.—The above observations, being the outcome of the examination of the ten sentences under analysis, are based only on the Bea speech, but in Appendix C will be found a similar analysis of the sentences conveying the Fire Legend in the five South Andaman Languages (Bojigigiji Group), which fully bears out all that has been above said. And from this Appendix is here attached a series of Tables, showing roughly how these Languages agree and differ in the essentials of word-building, premising that they all agree in Syntax, or sentence-building, exactly. An examination of the Tables goes far to show that the Andamanese Languages must belong to one Family.

COMPARATIVE TABLES OF ROOTS AND STEMS OF THE SAME MEANING OCCURRING IN THE FIRE LEGEND.

English	Bea	Boro	Bojigigiji	Joni	Kal
<i>Indicators (nouns).</i>					
camp	baraij	baroi	...	...	pōraich
fire	chapa	choapa	at	at	at

197

Predicators (verbs).

English	Ba	Bakwa	Bojigrah	Jawai	Kel
seize	eni	ena	di, li	...	...
take	ik	ik	ik	...	...
light-a-fire	dal	dal	kadak	kôdak	kôdak
sleep	mami	...	pat	ema	pat
steal	tap	...	...	top	...
bring	omo	omo	lechi	...	...
burn	pugut, pugari	puguru	...	...	...
wake	boi	...	konyi	...	...

Referent Substitutes (pronouns).

English	Ba	Bakwa	Bojigrah	Jawai	Kel
he	a	i, ong	ong	a	...
(they)	...	ongot	n'ong	...	n'a

COMPARATIVE TABLE OF AFFIXES OCCURRING IN THE FIVE LEGEND.

English	Ba	Bakwa	Bojigrah	Jawai	Kel
---------	----	-------	----------	-------	-----

Prefixes, functional, of intimate relation.

English	Ba	Bakwa	Bojigrah	Jawai	Kel
(his, it)-s	l'-	l'-	l'-	l', t'-	l'-
(his, it)-s	...	...	k'-	...	k'-
(their)-s	...	...	n'-	...	n'-

Prefixes, radical.

English	Ba	Bakwa	Bojigrah	Jawai	Kel
...	ot-	oto-	oto-	...	otam-, etc-
...	...	stak-	...	stak-	...
...	oko-	oko-	oko-	ôkô-, ôko-	oko-
...	...	...	o-	...	a-
...	...	ar-	...	...	ir-, iram-
...	i-	i-	...	...	...
...	...	ong-	...	on-	...

Suffixes, functional.

English	Ba	Bakwa	Bojigrah	Jawai	Kel
by	-lik	-te	-ke	...	-lak
in	-len	-a	-in, -an, -en	-in	-en
to	...	...	-len	-lin	-kete

Suffixes, qualitative.

English	Ba	Bakwa	Bojigrah	Jawai	Kel
was	-ka	-kate, -ia	...	-chike	-ke
-ing	-nga	-nga	-nga	...	...
did	-re	-t, -te	-ye, -an	-t	-an, -chine
(hon. of in.)	-la, -ola	-le	-la	...	-la

Many further proofs of the existence of the Andamanese Languages as a Family, subdivided into three main Groups, will be found later on in considering that great difficulty of the Languages, the use of the prefixes, and it will be sufficient here to further illustrate the differences and agreements between those of the South Andaman Group by a comparison of the roots of the words for the parts of the human body, a set of words which looms preponderantly before the Andamanese mental vision.

COMPARATIVE TABLE OF ROOTS AND STEMS DENOTING PARTS OF THE HUMAN BODY.

English	Ba	Bakwa	Bojigrah	Jawai	Kel
head	cheta	chekta	ta	tô	toi
brains	mun	mun	mine	mine	mine
neck	longota	longato	longe	longe	longe
heart	kuktahana	kuktahana	kapône	poktô	poktoi
hand	kôro	kôro	kôre	kôrô	kôre
wrist	tango	tango	to	to	to
knuckle	kutur	godia	kutar	kutar	kutar
nail	bodo	bôdo	pute	pute	pute
foot	pog	pog	ta	tok	tok
ankle	tôgar	tôgar	togar	togar	togar
mouth	hang	boang	pong	pong	pong
chin	ada	kada	teri	t'rye	t'rye
tongue	etal	atal	tatal	tatal	tâtal

197

English	Ba	Bakwa	Bajigrah	Jawi	Kal
jawbone	ekib	ton	ta	tó	teip
lip	pe	pa	pai	paka	pake
shoulder	pódikma	pódiaton	bee	tee	bein
thigh	paicha	ponicho	baichato	boichatokaa	baichetóan
knee	lo	lo	lu	lu	lu
shin	chalta	chalanta	chalta	choltó	chaltó
belly	jodo	jódo	chute	chute	chute
navel	er	akar	tar	takar	takar
armpit	anwa	ókar	kórteng	kórteng	kórteng
eye	dal	dal	kódak	kódag	kódak
eyebrow	punar	punu	bein	beinkaiñ	beinkif
forehead	mugu	mugu	mike	mike	mike
ear	puku	poku	bo	bótó	bokó
nose	chóronga	chóronga	kóte	kóte	kóte
cheek	ab	koab	káp	káp	káp
arm	gud	gud	kit	kit	kit
breast	kam	koam	kóme	kóme	kóme
spine	górob	kategórob	kinap	kurup	kurup
leg	chag	chag	chok	chok	chok
buttocks	dama	doamo	tome	tome	tome
arms	tomur	bang	tomur	kóliang	kóliang

Pulled to pieces, Andamanese words of any Group of the Languages seem to be practically the same, but this fact is not apparent in actual speech, when they are given in full with their appropriate affixes, thus—

English	Ba	Bakwa	Bajigrah	Jawi	Kal
head	ótchetada	ótchekta	ótetada	ótótólekile	ótetóiche
knee	abloda	ablo	abloda	alulekile	olache
forehead	igmunguda	idmngu	irmikeda	remilekile	ermikeche

Any one who has had practice in listening to a foreign and partially understood tongue knows how a small difference in pronunciation, or even in accentuation, will render unintelligible words philologically immediately recognizable on paper.

III. ETYMOLOGY.

The Use of the Roots.—As the Andamanese usually build up the full words of their sentences by the simple agglutination of affixes on to roots and stems, the word construction of their language would present no difficulties were it not for one peculiarity, most interesting in itself and easy of general explanation, though difficult in the extreme to discover: *experto crede*.

The Andamanese suffixes perform the ordinary functions of their kind in all agglutinative languages, and the peculiarity of the infix *l'* occurring in compound words depends on the prefixes. It is the prefixes and their use that demand an extended examination.

Anthropomorphism Colours the whole Linguistic System.—To Andamanese instinct or feeling, words as original meanings, *i.e.*, roots, divide themselves roughly into Five Groups, denoting—

- (1) mankind and parts of his body (nouns):
- (2) other natural objects (nouns):
- (3) ideas relating to objects (adj., verbs):
- (4) reference to objects (pronouns):
- (5) ideas relating to the ideas about objects (adv., connecting words, Proper Names).

The instinct of the Andamanese next exhibits an intense anthropomorphism, as it leads them to differentiate the words in the First Group, *i.e.*, those relating directly to themselves, from all others, by adding special prefixes through mere agglutination to their roots.

The Use of the Prefixes to the Roots.—These special radical prefixes by, some process of reasoning forgotten by the people and now obscure, but not at all in every case irrecoverable, divide the parts of the human body into Six Classes, thus, without giving a full list of the words in each class:—

193
197

RADICAL PREFIXES IN WORDS DENOTING PARTS OF THE HUMAN BODY BY CLASSES

Class	English	Ba	Bakawa	Bojigwab	Juwai	Kol
I	Head	ot-	ôt-	ote-	ôto-	ôto-
	Brains					
	Neck					
	Heart					
II	Hand	on-	ong-	ong-	ôn-	ôn-
	Wrist					
	Knuckle					
	Nail					
	Foot					
III	Ankle	akan-	aka-	a-	ôkô-	a-
	Mouth					
	Chin					
	Tongue					
	Jawbone					
IV	Lip	ab-	ab-	ab-	a-	a-
	Shoulder					
	Thigh					
	Knee					
	Shin					
	Belly					
	Navel					
V	Armpit	i-	id-	ir-	re-	er-
	Eye					
	Eyebrow					
	Forehead					
	Ear					
	Nose					
	Cheek					
VI	Arm	ar-	ar-	ar-	ra-	a-
	Breech					
	Spine					
	Leg					
	Buttock					
	Arms					

Prefixes to Words referring to the Human Body.—Next, in obedience to their strong anthropomorphic instinct, the Andamanese extend their prefixes to all words in the other Groups, when in relation to the human body, its parts, attributes and necessities, and thus in practice refer all words, capable of such reference, to themselves by means of prefixes added to their roots. In an Andamanese Language one cannot, as a matter of fact, say "head," "hand," "heart;" one can only say—

my	} head, hand, heart.
your	
his	
(so and so) —'s	
(that one) —'s	
(this one) —'s	

The Prefixes of Intimate Relation.—It is thus that the otherwise extremely difficult secondary functional prefix (always prefixed to the radical prefix, which is usually in Bojigngiji *le-* or *la-*, but practically always used in its curtailed form *l'-*, or *k'-*, *a'-*, *l'-* in certain circumstances) is clearly explainable. It is used to denote intimate relation between two words; and when between two indicators (nouns) it corresponds to the English connector (of), the Persian *izafat* (*-i-*), and so on, and to the suffix denoting the "genitive case" in the inflected languages. The Andamanese also use it to indicate intimate relation between predicator (verb) and complement (object), when it corresponds to the suffix of the "accusative case" in the inflected languages, and indeed to cases generally.

The Prefix System.—Starting with these general principles, the Andamanese have developed a complicated system of prefixes, making their language an intricate and difficult one for a foreigner to clearly apprehend when spoken to, or to speak so as to be readily understood.

As examples of this, let us take the stem *beri-aga* good: then *a-beri-aga*, good (human being); *na-beri-aga* (good hand, on pref. of hand), clever; *ig-beri-aga* (good eye, it pref. of

eye), sharp-sighted; *aka-beri-aga* (good mouth or tongue, *aka* pref. of mouth and tongue), clever at (other Andamanese) languages; *ot-beri-aga* (good head and heart, *ot* pref. of both head and heart), virtuous; *ua-i-ig-beri-aga* (good hand and eye, *ua* pref. of hand, *ig* pref. of eye, joined by *i* pref. of intimate relation), good all round.

So, too, with *jabag*, bad: *ab-jabag*, bad (human being); *ua-jabag*, stupid; *ig-jabag*, dull-sighted; *aka-jabag*, stupid at (other Andamanese) languages; *ot-jabag*, vicious; *ua-i-ig-jabag*, a duffer.

So again with *lams*, failing: *ua-lams* (failing hand or foot), missing to strike; *ig-lams* (failing eye), failing to find; *ot-lams* (failing head), wanting in sense; *aka-lams* (failing tongue), using a wrong word.

Lastly, in the elliptic speech of the Andamanese, the root, when evident, can be left unexpressed, if the prefix is sufficient to express the sense, thus—

i-beri-aga-da! may mean, "his-(face, pref. *i*)-good-(is)." That is, "he is good-looking!"

d-aka-chaw-ke! may mean "my-(mouth, pref. *aka*)-sore-(is)." That is, "my mouth is sore!"

Prefixes to Words Relating to Objects.—The system of using radical prefixes to express the relation of ideas to mankind and its body is extended to express the relation of ideas to objects in general. Thus—

ad-beringa, well (i. e., not sick): *ad-jabag*, ill (i. e., not well): *oko-lams* (applied to a weapon), failing to penetrate the object struck through the fault of the striker. So *ig-beringa* means pretty (of things): *aka-beringa*, nice (to taste): all in addition to the senses above given.

This is carried, with more or less obvious reference to origin, throughout the language. Thus—

In *Bea*: *yop*, pliable, soft. Then a cushion or sponge is *ot-yop*, soft: a cane is *oto-yop*, pliable: a stick or pencil is *aka-yop*, or *oko-yop*, pointed: the human body is *ab-yop*, soft: Class II of its parts (hand, wrist, etc.) are *oug-yop*, soft: fallen trees are *ar-yop*, rotten: an adze is *ig-yop*, blunt.

So again, in *Bea*: *chôrogya*, tying up, (whence also that which is usually tied up in a bundle, etc., a bundle of plantains, faggots). Then *ot-chôrogya* is tying up a pig's carcase: *aka-chôrogya*, tying up jack-fruit: *ar-chôrogya*, tying up birds: *oug-chôrogya*, tying up the feet of sucking pigs.

General Sense of Prefixes to Roots.—Possibly the feeling or instinct, which prompts the use of the prefixes correctly, could be caught up by a foreigner, just as the Andamanese roots might be traced by a sufficiently patient etymologist, but it would be very difficult and would require deep study. The Andamanese themselves, however, unerringly apply them without hesitation, even in the case of such novel objects to them as cushions, sponges and pencils; using *ot* in the two former cases, because they are round and globular, and *aka* in the latter, because they are rounded off to an end. In both these cases one can detect an echo of the application of the prefixes to the body: *ot* of head, neck, heart, etc.; *aka* of tongue, chin, etc.

Portman gives somewhat doubtfully the following as the concrete modifying references of such prefixes to the names of things:—

<i>ot</i> —	round things.
<i>oto</i> —	long, thin, pointed, or wooden things.
<i>aka</i> —, <i>oko</i> —	hard things.
<i>ar</i> —	upright things.
<i>ig</i> —	weapons, utensils, things manufactured.
<i>ad</i> —	speech (noises) of animals.

With this habit may be compared the use of numeral co-efficients in Burmese and many other languages.

From Portman also may be abstracted, doubtfully again, the following modifying abstract references of some of the radical prefixes:—

<i>ot</i> —, <i>oto</i> —, <i>ôto</i> —	special relation.
<i>ig</i> —, <i>ik</i> —, <i>i</i> —	reference in singular to another person.
<i>iji</i> —	reference in plural to other persons.
<i>eb</i> —, <i>ep</i> —	reference to ideas.
<i>akan</i> —	reference to self.
<i>ar</i> —, <i>ara</i> —	plural reference to persons generally.
<i>ar</i> —, <i>ara</i> —	(also) agency.
<i>ad</i> —	action of self.
<i>ab</i> —	action or condition transferred to another in singular.
<i>aiyo</i> —	action transferred to others in plural.

193
197

193
197

The following preliminary statement of the function of the radical prefixes can, therefore, be made out, viz., to modify the meanings of roots by denoting—

- (1) the phenomena of man and parts of his body :
- (2) the phenomena of objects :
- (3) the relation of ideas to the human body and objects :
- (4) reference to self :
- (5) reference to other persons :
- (6) ideas ; i. e., (a) actions of self, (b) actions transferred to others, (c) actions of others (agency) :
- (7) reference to ideas.

The Use of the "Personal Pronouns."—The habit of the Andamanese of referring everything directly to themselves makes the use of the referent substitutes for their own names (personal pronouns) a prominent feature in their speech. These are in full in the Bojignigiji group as follow :—

THE "PERSONAL PRONOUNS."

English	Bea	Balawa	Bojignab	Juwai	Kol
I	d'ol-la	d'ol	t'u-le	t'u-le	la-t'u-le
thou	ng'ol-la	ng'ol	ng'u-le	ng'a-kile	la-ng'u-le
he, she, it	ol-la	ol	u-le	a-kile	laka-u-le
we	m'oloi-chik	m'oloi-chit	m-u-le	m'e-kile	la-m'u-le
you	ng'oloi-chik	ng'oloi-chit	ng'uwe'l	ng'e'l-kile	la-ng'uwe'l
they	oloi-chik	oloi-chit	n'u-le	n'e-kile	kuchla-n'u-le

Limited Pre-inflexion.—In combination with and before the radical prefixes the "personal pronouns" are abbreviated thus in all the languages of the Bojignigiji Group :—

ABBREVIATED "PRONOMINAL" FORMS.

I, my	d'- in Bea, Balawa.
thou, thy	t'- in Bojignab, Juwai, Kol.
he, his, etc.	ng'- in all the Group
we, our	not expressed in the Group.
you, your	m'- in all the Group.
they, their	ng- in Bea, Balawa, Bojignab.
	ng'———, 'l in Juwai, Kol.
	not expressed in Bea, Balawa.
this, that one	n'- in Bojignab, Juwai, Kol.
	k'- in Bea, Balawa, Kol.
	not expressed in Bojignab, Juwai.
that one	t'- in all the Group.

In this way it can be shown that there are no real "singular possessives" in Andamanese, as the so-called "possessive pronouns" are merely the abbreviated forms of the "personal pronouns" plus *ia* (-da), etc.= belonging to, (property) thus—

"POSSESSIVE PRONOUNS."

English	Bea	Balawa	Bojignab	Juwai	Kol
my, mine	d'ia-da	d'eye	t'ia-da	t'ieya-kile	t'iyi-che
thy, thine	ng'ia-da	ng'eye	ng'ieya-da	ng'ieya-kile	ng'ieya-dele
his, her, its	ia-da	eye	ieya-da	eye-kile	ieya-dele

The "plural possessives" have been brought into line with the expression of plurality by radical prefixes, as will be seen later on.

Now, it is easy enough to express on paper the true nature of the above abbreviations by the use of the apostrophe, but in speech there is no distinction made. Thus, one can write "*d'un-lama-re*, I missed (my) blow," but one must say "*dunlamare*." So one can write "*ng'ot-jabag-da*, you (are a) vicious (brute)," but one must say "*ngotjabagda*." So also one can write :—

<i>ar-tam</i>	<i>d'uu-t'ig-jabag-da</i>	<i>Peda-re.</i>
formerly	I-hand-eye-bad.	exist-did.
<i>achitit</i>	<i>d'uu-t'ig-i nga</i>	
now	I-hand-eye-good.	

(once I was a duffer, now I am good all round.)

But one must say "*arlam duntigjabag ledare, achitit duntigberinga*." It would therefore be correct to assert that, though Andamanese is an agglutinative

tongue, it possesses a very limited pre-inflection, i.e., inflection at the commencement of its words.

Limited Correlated Variation (Concord).—The Andamanese also express the intimate relation of the "personal pronouns" with their predicators (verbs) by a rudimentary correlated variation (post-inflection in the form of concord) of forms:—Thus—

mami-ke sleeping-is	Then,	mamik-ka sleeping-was	mami-re sleep-did	mami-nga sleep-ing
		do mami-ke da mami-ka da mamire dona maminga	I am sleeping. I was sleeping. I slept. I (me) sleeping.	

This peculiarity is shown in all the Bojigugiji Group, except Kol; thus—

English	Bea	Balawa	Bojigrah	Juwai
<i>"In the Present Tense" (ke)</i>				
I	do	do	tuk	te
thou	ngo	ngo	nguk	nge
he, she, it	a	ong	uk	a
we	moicho	môt	môt	a
you	ngoicho	ngongot	nuk	me
they	eda	ongot	net	ngel
<i>"In the Past Tense" (ka and re)</i>				
I	da	do	tong	te
thou	nga	ngo	ngong	nge
he, she, it	a	ong	ong	a
we	meda	mongot	môt	me
you	ngeda	ngongot	ngongot	me
they	eda	ongot	net	ngel
<i>"In the Present Participle" (nga)</i>				
I	dona	...	tong	tôn
thou	ngôna	...	ngong	ngôn
he, she, it	oda	...	ong	ôn
we	moda	...	môt	mon
you	ngoda	...	ngowel	ngowel
they	oda	...	nong	ne

Expression of Plurality by Radical Prefixes.—The examination of the "pronouns" shows that the Andamanese can express things taken together (plural) as well as things taken by themselves (singular). This in their language generally is expressed by changing the forms of the radical prefixes, in Bea and Balawa habitually and in Kol and Juwai occasionally. Thus—

IN BEA.					
Sing.	Pla.	Sing.	Pla.	Sing.	Pla.
et-	otot-	eng-, on-	ciot-	ig-, ik-, i-	itig-
ab-	at-	ar-, ara-	arat-	aka-	akak-
ôto-	ôtot-	eb-	ebet-	ijj-	ijjet-
ôko-	ôkot-	ad-	ad-	akan-	akan-
en-	et-				
IN BALAWA.					
ôt-	ôtot-	ông-	ôngot-	id-	idit-
ap-	at-	ar-, ara-	arat-	aka-	akak-
ôto-	ôtot-	eb-	ebet-	idi-	idit-
ôko-	ôkot-	ad-	ad-	akan-	akan-
en-	et-				
IN JUWAI.					
ir-	ir-	ab-	at-	iche-	iche-
iram-	iram-	in-	in-		
IN KOL.					
re-	ri-	a-	o-	eche-	iche-
rem-	rim-	en-	in-		

As has been already noted, the plural of the "personal pronouns" in the "possessive" form has been made to fall into line with the plan of expressing plurality by means of the radical prefixes. Thus—

TABLE OF SINGULAR AND PLURAL "POSSESSIVE"

	English	Be	Balawa	Bojgyab	Juwai	Ka'
Sing.	my	diada	dege	tiyeda	tiyeakile	tiyiche
Plu.	our	metat	matat	miyeda	miye	miyede
Sing.	thy	ngiada	ngege	ngiyeda	ngiyekile	ngiyede
Plu.	your	ngetat	ngatat	ngiyida	ngiyel	ngiyil
Sing.	his	iada	ege	iyeda	eyeakile	iyede
Plu.	their	etat	atat	niyeda	niye	niyiche

Qualitative Suffixes.—The suffixes of Andamanese are (radical) qualitative (expressing the class of a word), or functional (expressing its function in the sentence). The radical qualitative suffixes usually employed are—

For Indicators (nouns)

Bea	Balawa	Bojgyab	Juwai	Ka'
-da	-da, -nga, -ke	-da	-lekile, -kile	-che, la
-la, -ola	-le	-le		-le
-la, -lo	-o, -o	-o	-o	-o
-ba				

The first of these is usually dropped in Balawa, and in all the languages also unless the word is used as an integer, or sentence in itself. The second is an honorific and is always added in full. The third is "vocative" and is suffixed to the name called out. The fourth is a negative: thus, abliga-da, a child; abliga-ba, not a child, a boy or girl.

For Explicators (adjectives)

-da	
-la	
-re	-et, -ot, -t

The second is honorific: the third applies to attributes, etc., of human beings. Generally, these affixes follow the rule for those of the indicators (nouns).

For Predicators (verbs)

English	Bea	Balawa	Bojgyab	Juwai	Ka'
(kill)s	-ke, -kan	-ke, -ken	-ke, -kan	-che, -chine	-ye
was (killing)	-ka	-ka, -te, -kate	-ya, -ye	-chike	-ye, -k
(killed)	-re	-t, -et	-nga, -nen	-chikan	-an, -wan, -nen
don't (kill)	-kok	-ton	-k	-chik	-k
(kill)ing	-nga	-t, -et, -ka	-nga	...	-in
(kill)s not	-ba, -bo	-ba	-na	...	...
(kill)ed not	-ta	...	...	...	...

The last two suffixes are added to the suffix *-nga* in Bea, thus—

dona	mami-nga-bo
I	sleep-ing-not (I am not asleep)
dona	karama
I	bow
	kop-nga-ta
	cutt-ing-(was)-not (I was not making a bow).

The Functional Suffixes.—The usual functional suffixes in Andamanese are—

TABLE OF SUFFIXES.

English	Bea	Balawa	Bojgyab	Juwai	Ka'
It, to, at	-len	-len, -a	-an	-an	-an
From	-tek	-te, -le	-e, -te, -le	-e, -lak	-e, -lake, -kate
To, towards	-lat	-lat	-lat	-late	-late
Of	-lia	-lere	-liye	-leye	-liye
For	-leb	-leb	-leb	-lebe	-lebe
After	-lik	-le	-le	-le	-le

The Functional Suffixes are Lost Roots—Attempt at Recovery.—It may be taken as certain that the functional suffixes are roots, now lost to Andamanese recognition, agglutinated to the ends of words by the usual means in their languages, as exhibited in the prefixes; viz., by prefixing to them *l'*-, *f'*-, *k'*—in the manner already explained. The roots of some of the suffixes can be fairly made out thus, from the *Vocabularies*.

- (1) *Len, fwa, a, an*, "in, to, at," seem to be clearly *l'*-, *f'*—+the root *en, e, it*, "take, hold, carry, seize."

- (2) *Tek, te, le, e, lak, lake, kate*, "from" seem to be *l'*-, *l'*-, *k'*- + the root *ik, i, eak*, "take away." 193
- (3) *Lat, late*, "to, towards," seem to be *l'*- + the root *at, ate*, "approach." 197
- (4) *Lis, lege, liye, lege*, "of" seem to be *l'*- + the root *ia, ege, ii, eye*, "belonging to."
- (5) *Lob, lobe*, "for" seem to be *l'*- + a root not traced.
- (6) *Lik, le*, "with, after" seem to be *l'*- + the root *ik, e, ak*, "to go with, follow on."

IV. PHONOLOGY.

The Voice of the Andamanese.—The voice of the Andamanese, though occasionally deep and hoarse, is usually pleasant and musical. The mode of speech is gentle and slow, and among the women a shrill voice is used in speaking; but though the tendency is towards a drawled pronunciation, they can express their meaning quickly enough on occasion, too quickly, indeed, for a foreigner to clearly follow the minutiae of pronunciation without very close attention. The general tone of the voice in speaking is low. 194

On an examination of the prevalent vowels and vowel interchanges and tendencies in the languages of the South Andaman (Bojigigiji) Group of Tribes, as described by Portman, it may be said that they relatively speak thus from a close to an open mouth:—

Juwai	with closed lips.
Bojigiyab and Kol	with flattened lips.
Balawa	with open lips.
Bea	with lips tending to open wide.

It is interesting to note that the above results carry one straight from North to South.

History of the Reduction of the Language to Writing.—The Andamanese speech, as it is now studied, was first committed to writing on a system devised by myself, which was an adaptation of the system invented by Sir William Jones in 1794 for the Indian Languages and afterwards adopted, with some practical modifications introduced by Sir W. W. Hunter, by the Government of India as the "Hunterian System." My method of writing Andamanese was subsequently modified for scientific purposes by Mr. A. J. Ellis in 1882, and having so highly trained and competent a guide, one cannot do better than use here a modification of his system, adapted to the need of a general publication. Portman, unfortunately, has, in his publications, gone his own way, to the great puzzle of students.

In this view, there is no necessity to say anything of the consonants used, and as to the vowels, the following table will sufficiently exhibit them in the Bea Language:—

THE VOWELS IN BEA.

English	Bea	English	Bea
idea, cut	alaba	indolent	boigoli
car	ba, yaba	pole	joh
father	däte	konig (Ger.)	tö
fathom	järawa	pot	pölike
bed	emej	awful	tögo
fade	akabäda	influence	bäkrura
pair	ela	pool	pödre
lid	igbedigre	bite	daike
police	yädi	hose	chopana
...	...	hass (Ger.)	chän
...	...	bel	böigoli

Peculiarities of Speech.—Stress in Andamanese is placed on every long vowel, or on the first syllable of the root or stem. Peculiarities of pronunciation in the South Andaman Languages are as follow:—

Bea.

Sibilants tend to become palatale, *s* to *ç*: *ç* and *ç* are interchangeable: final open *ç* and *ç* tend to *s* and *ç*: *t* is an indistinct palato-dental.

116

BALAWA.

194 *t* is palato-dental and liped, cf. Irish pronunciation of English *t* and *d*. The *a* vowels tend to be drawn out: *a* to become *o*, and *d* to become *od*. There is also an incipient *sandhi* in words ending in gutturals: e.g., *rdk*, pig; *rdg-dōmo*, pig's flesh.

BOJIGYAB.

ch is palato-dental and tends to *t*, and the *ch* of *Bea* tends in *Bojigryab* to become *e*; i.e., palatals tend to become sibilants.

JUWAI.

Short vowels are not clearly marked: *e* and *a* are interchangeable: final *e* and *a* tend to *i*. Vanishing short vowels are common and are shown thus, *j'rōngap*: *o* is often drawn to *δ*: penultimate *e* is lengthened to *ē*, and stressed *i* is drawn to *ia*. There is *sandhi* of final and initial vowels in connected consecutive words. Dental, palatal and cerebral *t* all exist: palatals tend to dentals, *ch* to *t*: *p* tends to soften to *pā* and almost to *f*.

KOL.

ā interchanges with *ō*: *δ* tends to *od*, cf. old English pronunciation *gyarden* for *garden*: *e* tends to *ē*: final open vowels are uncertain.

V. THE NORTHERN AND OUTER GROUPS.

197 Proofs of the Identity of the Northern and Southern Groups of Languages.—Of the Five Languages of the Northern (Yerewa) Group, two, Kora and Tabo, are still quite unstudied, the knowledge of the existence of the tribes speaking them being of less than two years' standing, and the language of the Yere Tribe is very little known. Portman has, however, preserved long lists, unfortunately to be treated with much caution, of Kede and Chariar words, together with many sentences, and it will be sufficient here to give a series of roots and stems, showing where the Northern and Southern Languages meet, and how closely related they are by roots: premising that the syntax and word-structure of the Northern Group is identical with that of the Southern Group, and that affixes, notably the radical prefixes, are used precisely in the same way in both Groups. It is in the names for common objects and things that languages show their relationship, and the Bojigngiji and Yerewa Groups form no exception to this rule.

TABLE OF SOME BOJIGNGILI AND YEREW A ROOTS SHOWING A COMMON ORIGIN.

English	Bea	Bojigryab	Kola	Chariar
pig	reg	re	ra	ra
turtle	tas	tare	tōrō	tōrō
clam	chowai	chowai	chowai	choa
grub	butu	peti	pata	pata
fish	yat	taiye	tajeu	tajeu
bow (N.)	chokio	chokio	chokio	chokwi
bow (S.)	karama	ko	ku	ku
wooden arrow	tirlech	tolō	tirlech	tirleit
wooden pig a.	paligma	paligma	paligma	paligma
wooden a head	cham	cham	chōm	chom
harpoon string	betmo	kōri	betmō	luremō
bamboo bucket	gob	hire	kup	kup
shell-dish	chidi	kar	kar	kar
shell-cup	edo	kor	kur	kor
adze	wolu	wole	wo	ole
baby-sling	chip	chepe	chipa	chiba
cord-ornament	ra	ra	ro	iku
leaf-wrapper	kapa	kabe	kōbo	kōbu
red-ochre	koioh	keyep	keip	keip
stone hammer	tailibana	me	mio	meō
stone anvil	rōrop	rarap	rōrop	rōrop
cane	roko	ro	ro	rua
e. outtrigged	charigma	charikma	chorok	chorok

The same community of roots is to be seen in the names of the trees on the islands, establishing beyond doubt the close common origin of the Andaman Tribes of the Yerewa and Bojigngiji Groups, though it will, of course, be

understood that in full form, with prefixes and suffixes, very nearly related words are, in practice, unintelligible to the ear. There are, equally of course, a great number of words, the roots of which, while common to each other in the Yerewa Group, differ entirely from those common to the Bojengiji Group: thus—

TABLE OF VARYING BOJENGILI AND YEREWÁ ROOTS.

English	Bea	Bojengib	Kede	Charier
ornamental net	rab	rap	chirebale	chirbale
jungle-cat	baiyan	beyen	chan	chan
belt, round	bod	bel	tótó	tótó
b. flat, broad	rogan	rogan	kuto	kudu
iron fish, arrow	tólbod	pót	rantul	rantul
larva in comb	tó	to	jota	joto
honey	aja	koi	tumel	tumel
black honey	tubal	tipal	maro	maro
cockles	ula	tale	bun	bun

It is to be observed that in the above list, the compound stem in Bea for iron-fish-arrow, *tólbod*, is made up apparently of the roots *pót* and *tal* in the other languages quoted: while *rantul* seems to have become transferred from the pig, *ra*, to the fish, *tayen*. A similar transfer has taken place between *tumel*, *timei*, the "black honey" of the North and *tubal*, *tipal*, the "honey" of the South. All of which observations tend to confirm the close connection between the Tribes and the Languages of both Groups.

The Outer Group (Önge-Jarawa) examined.—In turning to the Önge-Jarawa Group, one finds that the hostility of the Jarawas, and the only recent friendliness of the Onges combined with the inaccessibility of the island they inhabit, have caused the knowledge of their language to be but slight. However, we have the careful *Vocabulary* of Colebrooke made in 1790 and those made by Portman just a century later. An examination of these affords sufficient results for the present purpose: *viz.*, proof of the fundamental identity of the language of these people with that of the rest of the Andaman Tribes, and what is, perhaps, quite as interesting, proof that Colebrooke's informant really was a Jarawa.

The Limited Knowledge of it.—A comparison of such of Portman's words as can be compared with Colebrooke's, when shown with roots and affixes separated and reduced to one system of transcription, produces the following results; noting that in their actual lists, both enquirers fell into the natural error of taking the prefixed inflected "personal pronouns" to be essential parts of the words to which they were attached.

A LIST OF ÖNGE-JARAWA WORDS.

English	Colebrooke's Jarawa	Portman's Önge
arm	pi-li	öni-bi-le
arrow	bato	bartoi
bamboo	o-ta-li	o-da-le
basket	tere-nge	tó-le
bead	tahi	taiyi (stone)
beast	ingo-taiya (h. a person)	yókwo-be
belt	oto-go-le	are-kwa-ge
bite	m-o-paka-be (b. me)	oni-baga-be (b. a person)
black	chigeu-ge	be
blood	koche-nge	gache-nge
bone	ng-i-to-nge (your b.)	schin-da-ge
bow	ta-nge (? wood), ta-hi (as shown in ng-i-tahi) (your bow)	sai
breast	ka	ng-a-ga-ge (your b.)
canoe	lak-ke	tate
chin	pi-to-nge (c. bone)	ibi-ta-nge (c. bone)
cold	choma	ugite-be (to be c.)
cough	ingo-talis (? ta-be)	udu-be
drink	m-inggo-be (I d.)	injo-be
ear	kwa-ge	ik-kwa-ge
earth	totango-ge	tutano-nge
eat	ingo-lolia (? imp.)	öni-lokwale-be
elbow	maha-lajebe (my e.)	aha-lajebei

197

apiah	Colebrooke's Jarawa	Portman's Onges
eye	jobe	öni-jeboi
finger	m-ome (my f.)	ome
fire	m-ona (my f.)	tu-ke
fish	ng-a-bohi (your f.)	cho-nge
hair	ot-ti	o-de
hand	ng-oni (your h.)	ome
	m-oni (my h.)	
head	tebe	öni-tolajiboi (man's head)
honey	lo-ka	tanjai
house	bede	bedai
iron (adze-head)	dahi	doi
jump	i-to-le (a j.)	akwa-tokwa-be (to j.)
knee	ingo-le-ke (man's k.)	o-la-ge
hugb	ente-me-be	önge-ma-be
nail	m-o-bejeda-nga (my n.)	m-o-bedu-nga (my n.)
neck	tohi	öni-ngrito
net	bato-li	chi-kwe
nose	m-e-li (my n.)	öni-nyuboi
paddle	m-ekal (my p.)	tsai
path	echo-li	iche-le
pig	stwi	kwi
punch	ingi-gini-cha	öni-gini-be
	body-punch-don't	
	(don't pinch me)	
plantain-tree	chole-li	yold-le
pot	buchuhi	bucha
pull	toto-be (+ tigikwa)	tütö-be (go)
rain	eye	gujü-nga
run	ng-aha-bela-be (you r.)	aha-bela-be
scratch	inga-ben-be	a-kwa-be
ring	goko-be	gögaba-be
sit	ng-ong-tahi (s. you)	önan-tokü
sleep	ng-omo-ka (s. you)	omo-ka-be
sky	madamo	be-nga-nga (flattened cut)
moore	o-che-ka (a s.)	e-chi-be (to s.)
spitting	inga-kwa-nga	öna-kwa-nga
star	chilo-be (? shines)	chilome-be (moon : ? shines)
stone	wu-le	tsiyi
sun	ehe	eko
swim	kwa-be	kwan-be
take up	ng-a-toha (you t. u.)	genge-be
teeth	m-ahoi (my t.)	m-atwe (my t.)
tongue	ta-li	alan-da-nga
walk	bunijwa-be	bujiö-be
water	m-igwa (my w.)	i-nga
weep	wana-be	wana-be
wind	tomjame	totöte
wood (tree)	ta-nga	da-nga

In addition to this list of words offering comparisons, the following from Colebrooke can more or less clearly be made out on the same lines :—

COLEBROOKE'S JARAWA WORDS.

English	Jarawa	English	Jarawa
(white) ant	do-nga	friend	padu
bat	witwi-le	leg	chi-ge
belly	ng-a-poi (your b.)	man	ng-amo-lan (you are a man ?)
bind	to-be, toto-be	mouth	m-ona (my m.)
bird	lobe	seed	kita-nga
bracelet	a-le	smoke	bali-nga
charcoal	wahi	swallow	hi-be
crow	nabe	thigh	poi
flesh	wuhi	wash (self)	inga-doha-be

Portman is unfortunately always difficult to follow in his linguistic statements, so they are so uncertain. His vocabularies are apt to differ frequently from the statements in his lists of sentences, and where his vocabularies can be compared they are inconsistent: but at p. 751, Vol. II, of his *History of our Relations with the Andamanes*, he gives a comparative list of Jarawa and Onges words from his own observations.

PORTMAN'S ÔNGE-JARAWA WORDS.

English	Jarawa	Ônge
arrow	bartoi	bartoi
axe	doi	doi
bamboo	otale	ôdale
bow	asii	asii
bucket	uhu	ukui
crab	kagai	kagaia
drink	injowa	injobe
eye	injamma	unijeboi
fire	tuhawe	tuke
foot	monge	muge
hair	enoids	môde
hand	moms	mome
iron	tanki	doi (iron adze)
leaf	bebe	bebe
nautilus	gaai	gaai
navel	inkwa	onikwale
net	bortai	chitwe
nose	inama	uningaiboi
road	ischele	ichele
run	ahabelabe	akwabelabe
sea	otale	detale (Passage Id, an islet in the sea)
sit down	atôn	unantokobe
sky	baingala	bengonga
sleep	omohan	omokabe
string	etai	ebe
stone	uli	taiyi
tooth	anwai	makwe
water	enule	inge

197

In some of the above words, where Colebrooke differs from Portman, it will be found that Colebrooke's forms, when reduced to a common transcription, are nearest the Ônge.

Recovery of Colebrooke's Jarawa Vocabulary of 1790.—By pulling the words in the first list to pieces, the identity in race of Colebrooke's native (Jarawa) with Portman's natives (Ônges) will be at once evident. Many roots and affixes are common, and the words are clearly built up precisely as are all other Andamanese words by radical prefixes to roots relating fundamentally to the body and its parts and by qualitative suffixes. In addition to this, the prefixes are joined to the "personal pronouns" by pre-inflection in the manner peculiar to the Andamanese languages. And although we have nothing more on record of the Jarawa tongue than Colebrooke's list, supplemented by Portman's, of any value, we have thus enough to establish the relation of Jarawa and Ônge as languages of the same Group, and the relation of both as languages of the same family as the other Andamanese tongues.

In Jarawa the *i* of Ônge tends to interchange with *ä*, and by inference the Jarawas appear to use *egg* for the Ônge *ag* and to say *i-egge* in place of *i-age*.

Leaving the roots to explain themselves, the inflected forms of the "pronouns" show themselves, thus—

ÔNGE-JARAWA "PRONOUNS."

English	Jarawa	Ônge
I, my	m'-	m'-
You, your	ng'-	ng'-

The qualitative suffixes appear to be as follow—

ÔNGE-JARAWA QUALITATIVE SUFFIXES.

for "nouns"	-li, -le	-le
for "verbal nouns"	-nge, -nga, -ge, -ke	-nge, -ng, -ge, -ke
for "verbs"	-be	-be, -me

The radical prefixes are given in a great variety of forms, which will probably disappear on closer knowledge of the languages.

ONGE-JARAWA RADICAL PREFIXES.

197

Jarawa
 ingo-, ingi-, inga-, ~~enke-~~, öng-, ö-
 uni-
 o-, i-, ö-
 i-
 yi-
 i-
 aha-, a-
 omo-
 oto-

Önge
 { öni-, öna-, önu-, öno-, önan-, ina-, ine-, eng-,
 eui-, önge-
 u-
 ö-, ö-, a-, e-
 eje-, ichin-, e-
 ibi-, ebe-
 akwa-, akwe-, ako-, ik-, ig-, i-
 aha-, a-
 omo-
 are-
 alan-

Of these, as prefixes relating to mankind and the human body, the following occur:—

Class I	öni-	öni-, a general prefix of the body and then,
Class II	ik-, ig-, i-	head, lip, neck, nose, navel, hip, testicles, stomach.
Class III	ibi-	check, ear.
Class IV	e-	chin.
Class V	alan	fiat, knee, nail, throat.
		teeth.

That the relation between concrete words for the parts of the body and those for ideas belonging to them is shown by the prefixes, comes out neatly in *ik-kwa-ge*, ear: *ik-aibene*, deaf. So, too, the words *ichin-da-nge* and *i-to-nge* given for "bone" probably refer to a bone of Class II.

Proof of the Identity of Önge-Jarawa with the other Groups.—Among an untutored people, so long isolated even from the other Andamanese, one would hardly look for many roots now in common with them, but the following, which occur in such short lists as those available, sufficiently establish a common origin for the Family.

SOME COMMON ROOTS IN THE ANDAMAN LANGUAGES.

English	Önge-Jarawa	Remaining Languages
bat	witwi	wöt, wat, wot.
cold	eboma	choki (Bea).
red ochre	gvalap	bilap, upla.
net	chi	chi.
snore	ebe, chi	chiba (Bea, Balawa).
"God"	Uluga: (<i>öluge</i> , thunder)	Puluga, Bilak (Bea <i>wal-uga</i> , storm).
turtle	chöbe	chokbe (Kede, Chariar).
water	i, ig	ima (Bea, Balawa).
bone	to	ta, toa (Bea, Balawa).
wood	ta, da	ta, toa, to.

Colebrooke showed all sorts of impossible things to his Jarawa to name, and one interesting result is the following:—

English	Jarawa	Önge
cotton cloth }	pa-nge-be	be-nge-be
paper }	bat-become-is	fat-become-is

Of course, no Jarawa had ever seen before anything approaching to either object, and this man's one expression for both means "it is (has been) flattened," which is what the savage meant to convey when asked anything so impossible as to name them.

In Appendix B will be found a further list of Önge words to aid in the study of this interesting language.

101

Derivation of Mincopie.—We are now in a position to solve a great puzzle of ethnographers for a century and more: why were the Andamanese called Mincopie by Europeans? What word does this transcription represent? It can now be split up thus—

M-ö-nge-be.
 I-man-kind-am
 (I am an Önge)

Or, as the the Jarawas perhaps pronounce the expression "M-inggo-be" or even "M-injo-be," I am an Inggo (Injo). The name given by the Onges to

themselves is a "verbal noun" *ô-nye*, man-being. So that when questioned as to himself by Colebrooke, this Jarawa replied "M'inggobe," or something like it, which compound expression by mistranscription and misapprehension has become the well-known Mincopie of the general ethnological books in many languages for an Andamanese. The Ônges call their own home, the Little Andaman, Gwabe-l'Ônge. Jarawa is a modern Bea term, possibly radically identical with Yerewa, the Bea name for the Northern Group of Tribes. 101

It is just possible that Colebrooke's Jarawa misunderstood what was wanted altogether and simply said, "I am (will be, would be) drinking: *m-inggo-be, I-drink-do*."

I have now to record a great disappointment. The proof that the method herein adopted for recovering the Jarawa Language was correct lay in the fact that the word *ô-nye* for "water" was ascertained from a little Jarawa boy captured in February, 1902, and the identical word was quite independently unearthed from Colebrooke's and Portman's Vocabularies as Ônge-Jarawa for "water." The only other word clearly ascertained from the boy *wasô-ny* for "pig," has not been gathered independently as yet. This little boy was the last of the prisoners left, who were captured on that occasion (*vide* Ch. III, Appx. C.) as the women and small children and girls were all returned and only two boys kept back for a while in order to get their language, etc., from them. Of these, the elder died of fever and on the very day that their language was fairly recovered, and we were in a position to set to work to learn quickly from him, the younger died very suddenly, without warning illness, of pneumonia.

APPENDIX A.

121

EXPLANATION OF THE THEORY OF UNIVERSAL GRAMMAR USED IN
EXPOUNDING THE ANDAMAN AND NICOBAR LANGUAGES.

In building up a Theory of Universal Grammar it is necessary in order to work out the argument logically, to commence where the accepted Grammars end, *viz.*, at the sentence, defining the sentence as the expression of a complete meaning, and making *that* the unit of language. Clearly, then, a sentence may consist of one or more expressions of a meaning or "words," defined as single expressions of a meaning. It can also consist of two separate parts—the subject, *i.e.*, the matter to be discussed or communicated, and the predicate, *i.e.*, the discussion or communication. And when the subject or predicate consists of many words it must contain principal and additional words.

This leads to the argument that the components of a sentence are words, placed either in the subjective or predicative part of it, having a relation to each other in that part of principal and subordinate. Therefore, because of such relation, words fulfil functions. The functions then must be of the principal words to indicate the subject or predicate, and of the subordinate words in the predicative part of the sentence to illustrate the predicate, and in the subjective part to explain the subject or to illustrate that explanation. Again, as the predicate is the discussion or communication on the subject, it is capable of extension or completion by complementary words, which form that part of a sentence recognized in the Grammars as 'the object.'

This completes the first stage of the argument leading to a direct and simple definition of grammatical terms; but speech obviously does not stop here, because mankind speaks with a purpose, and the function of his sentences is to indicate that purpose, which must be one of the following in any specified sentence—(1) affirmation, (2) denial, (3) interrogation, (4) exhortation, (5) information.

Now, purpose can only be indicated in a sentence by the position or tones of its components, by variation of their forms, or by the addition of special introductory words. Also it is obvious that when purposes are connected they can be indicated by connected sentences, and that these sentences must be in the relation to each other of principal and subordinate. This relation can only be expressed by the position of the sentences themselves, by variation of the forms of their components, or by the addition of special words of reference. A word of reference must act in one of two ways, either by merely joining sentences, or by substituting itself in the subordinate sentence for the word in the principal sentence to which it refers. Further, as there is a necessary inter-relation between the words in a sentence, this can only be expressed by the addition of special connecting words, or by variation or correlated variation of form.

These considerations complete what may be called the second stage of the argument leading to clear definitions of grammatical terms. The argument thereafter becomes more complicated, taking us into the explanation of elliptical, *i.e.*, incompletely expressed, forms of speech, and into these expansions of sentences known as phrases, clauses, and periods. But to keep our minds fixed only on that part of it which leads to plain grammatical definitions, it may be stated now that functionally a word must be either,—inventing new terms for the purpose:

- (1) An *integer*, or a sentence in itself. [imperatives, interjections, pronouns, numerals.]
- (2) An *indicator*, or indicative of the subject or complement (object) of a sentence. [nouns.]
- (3) An *explicator*, or explanatory of its subject or complement. [adjective.]
- (4) A *predicator*, or indicative of its predicate. [verb.]
- (5) An *illustrator*, or illustrative of its predicate or complement, or of the explanation of its subject or complement. [adverb, adjective.]
- (6) A *connector*, or explanatory of the inter-relation of its components (words). [conjunction, preposition.]
- (7) An *introducer*, or explanatory of its purpose. [conjunction, adverb.]
- (8) A *referent connector*, or explanatory of the inter-relation of connected sentences by joining them. [pronoun, conjunction.]
- (9) A *referent substitute*, or explanatory of the inter-relation of connected sentences by substitution of itself in the subordinate sentence for the word in the principal sentence to which it refers. [relative pronoun, conjunction.]

These, then, were the terms proposed and the arguments out of which they grew. Of course, grammarians will know that all this is syntax, and it must now be explained why the Theory makes it necessary to consider it far more important to study function than form or tone as essential to the correct apprehension of the nature of words, and that accident arises properly out of syntax and not the other way round, as we have all been taught.

It is obvious that any given word may fulfil one or more or all the functions of words, and that therefore words may be collected into as many classes as there are functions, any individual word being transferable from one class to another and belonging to as many classes as there are functions which it can fulfil. The functions a word fulfils in any particular sentence can be indicated by its position therein without or with variation of form, or by its tone; and, because of this, the form or tone which a word can be made to assume is capable of indicating

the class to which it belongs for the nonce. It is further obvious that words transferable from class to class belong primarily to a certain class and secondarily to the others, that a transfer involves the fulfilment of a new function, and that a word in its transferred condition becomes a new word connected with the form fulfilling the primary function, the relation between the forms or tones, *i.e.*, the words, so connected being that of parent and offshoot. Form and tone, therefore, can indicate the class to which a parent word and its offshoots respectively belong.

This is the induction that leads to the argument that form grows out of function, or, to put it in the familiar way, accidents grow out of syntax, because when connected words differ in form they must consist of a principal part or stem, and an additional part or functional affix. The function of the stem is to indicate the meaning of the word, and the function of the affix to modify that meaning with reference to the function of the word. This modification can be expressed by indicating the class to which the word belongs, or by indicating its relation or correlation to the other words in the sentence.

But the stem itself may consist of an original meaning and thus be a simple stem, or it may contain a modification of an original meaning and so be a compound stem. A compound stem must consist of a principal part or root and additional parts or radical affixes, the function of the root being to indicate the original meaning of the stem, and of the radical affixes to indicate the modifications by which the meaning of the root has been changed into the meaning of the stem.

Further, since words fulfil functions and belong to classes, they must possess inherent qualities, which can be indicated by qualitative affixes and by tones.

Thus it is that the affixes determine the forms of words, bringing into existence what is usually called etymology or derivation. They are attachable, separably or inseparably, to roots and stems and words by the well-recognized methods of prefixing, infixing, and suffixing either in their full or in a varied form. It is the method of attaching them by variation of form that brings about inflexion in all its variety of kind.

Such is the line inductive argument naturally takes in order to work out the grammar of any given language or group of languages logically, starting from the base argument that speech is a mode of communication between man and man, expressed through the ear by talking, through the eye by signs, or through the skin by touch, and taking a language to be a variety or special mode of speech.

The grammar, *i.e.*, the exposition of the laws, of any single language stops at this point and to carry the argument further, as one of course must, is to enter the region of Comparative Grammar. In doing so one must start at the same point as before, *viz.*, the sentence, but progress on a different line, because hitherto the effort has been to resolve the unit of language into its components, and now it has to be considered as being itself a component of something greater, *i.e.*, of a language.

To continue the argument. Since a sentence is composed of words placed in a particular order without or with variation of form, its meaning is clearly rendered complete by the combination of the meaning of its components with their position and tones or forms or both. Also, since sentences are the units of languages, words are the components of sentences and languages are varieties of speech, languages can vary in the forms and tones of their words, or in the position in which their words are placed in the sentence, or in both. And thus are created classes of languages. Again, since the meaning of a sentence may be rendered complete either by the position of its words or by their tones and forms, languages are primarily divisible into syntactical languages or those that express complete meaning by the position of their words; and into formative languages, or those that express complete meaning by the forms of their words. Also, since syntactical languages depend on position or on position combined with tone to express complete meaning, they are divisible into analytical and tonic languages. Further, since words are varied in form by the addition of affixes, and since affixes may be attached to words in an altered or unaltered form, formative languages are divisible into agglutinative languages, or those that add affixes without alteration; and into synthetic languages, or those that add affixes with alteration. And lastly, since affixes may be prefixes, infixes, or suffixes, agglutinative and synthetic languages are each divisible into (1) pre-mutative, or those that prefix their affixes; (2) intro-mutative, or those that infix them; and (3) post-mutative, or those that suffix them.

Thus inductive argument can be carried onwards to a clear and definite apprehension of the birth and growth of the phenomena presented by the varieties of human speech, *i.e.*, by languages. But, as is the case with every other natural growth, no language can have ever been left to develop itself alone, and thus do we get the phenomena of connected languages, which may be defined as those that differ from each other by varying the respective tones, forms and position, but not the meanings, of their words. And since the variation of form is effected by the addition of altered or unaltered affixes, connected languages can vary the forms of the affixes without materially varying those of the roots and stems of their words. In this way they become divisible into groups, or those whose stems are common, and into families, or those whose roots are common.

It is also against natural conditions for any language to develop only in one direction, or without subjection to outside influences, and so it is that we find languages developing on more than one line and belonging strictly to more than one class, but in every such case the language has what is commonly called its genius or peculiar constitution, *i.e.*, it belongs primarily to one class and secondarily to the others.

I have always thought, and I believe it can be proved, that every language must conform to some part or other of the Theory above indicated in outline, and in that case the

121

Theory would be truly what I have ventured to call it—"A Theory of Universal Grammar." That such a Theory exists in nature and only awaits unearthing, I have no doubt whatever. Mankind, when untrammelled by 'teaching,' acts on an instinctive assumption of its existence, for children and adults alike always learn a language in the same way if left to themselves. They copy the enunciation of complete sentences from experts in it to start with, learning to divide up and vary the sentences so acquired afterwards, and this is not only the easiest but also the quickest way of mastering a foreign tongue correctly. Its natural laws, i.e., its rules of grammar, as stated in books about it, are mastered later on, and in every case where they only are studied there comes about that book knowledge of the language, which is everywhere by instinct acknowledged to be a matter apart from and in one sense inferior to the practical or true knowledge. I use the term 'true' here, because, unless this is possessed, whatever knowledge may be acquired fails to fulfil its object of finding a new mode of communicating with one's fellow man.

Book knowledge of a language is useful only for scientific and educational purposes, but if the laws laid down in the set Grammars were to follow closely on the laws instinctively obeyed by the untutored man, and to do no violence to what instinct teaches him to be the logical sequence of ideas, the divorce between practical and linguistic knowledge—between knowledge by the ear and knowledge by the eye—would not be so complete as it is nowadays. And not only that, if the laws could be stated in the manner above suggested, they could be more readily grasped and better retained in the memory, and languages would consequently be more quickly, more thoroughly, and more easily learned, both by children and adults, than is now practicable. Looked at thus, the matter becomes one of the greatest practical importance.

This is what the Theory attempts to achieve: but, assuming it to be fundamentally right and correctly worked out, it should explain the workings of the untutored mind of the Andamanese or Nicobarese as exhibited in his speech, although it reverses the accepted order of teaching, alters many accepted definitions, and, while admitting much that is usually taught, it both adds and omits many details, and taken all round is a wide departure from orthodox teaching. How wide the following observations will show. The familiar terminology has been changed in this way. The old noun, adjective, verb, adverb, preposition, and conjunction become indicator, explicator, predictor, illustrator, connector, and referent conjunctive, while interjections and pronouns become integers and referent substitutes. Certain classes also of the adverbs are converted into-introducers. Gender, number, person, tense, conjugation, and declension all disappear in the general description of kinds of inflexion—the object becomes the complement of the predicate, and concord becomes correlated variation.

The Theory is based on the one phenomenon, which must of necessity be constant in every variety of speech, i.e., the expression of a complete meaning, or, technically, the sentence. Words are then considered as components of the sentence, firstly as to the functions performed by them, and next as to the means whereby they can be made to fulfil their functions. Lastly, languages are considered according to their methods of composing sentences and words. Assuming this course of reasoning to be logically correct, it must, when properly worked out, explain every phenomenon of speech; and when its dry bones have been clothed with the necessary flesh for every possible language by the process of direct natural development of detail, a clear and fair explanation of all the phenomena of speech must be logically deducible from the general principles enunciated therein.

The Skeleton of a Theory of Universal Grammar.

SPEECH is a mode of communication between man and man by expression. Speech may be communicated orally through the ear by talking, optically through the eye by signs, tangibly through the skin by the touch. LANGUAGES are varieties of speech.

The units of languages are SENTENCES. A sentence is the expression of a complete meaning.

A sentence may consist of a single expression of a meaning. A single expression of a meaning is a WORD. A sentence may also consist of many words. When it consists of more than one word, it has two parts. These parts are the SUBJECT and the PREDICATE. The subject of a sentence is the matter communicated or discussed in the sentence. The predicate of a sentence is the communication or discussion of that matter in the sentence.

The subject may consist of one word. It may also consist of many words. When it consists of more than one word, there is a principal word and additional words. The predicate may consist of one word. It may also consist of many words. When it consists of more than one word, there is a principal word and additional words. Therefore the components of a sentence are words placed either in the subjective or predicative part of it, having a relation to each other in that part. This relation is that of principal and subordinate.

Since the words composing the parts of a sentence are placed in a position of relation to each other, they fulfil functions. The function of the principal word of the subject is to indicate the matter communicated or discussed by expressing it. The function of the subordinate words of the subject may be to explain that indication, or to illustrate the explanation of it. The function of the principal word of the predicate is to indicate the communication or discussion of the subject by expressing it. The function of the subordinate words of the

predicates may be to illustrate that indication, or to complete it. The predicate may be completed by a word explanatory of the subject or indicative of the COMPLEMENT. Therefore, primarily, the words composing a sentence are either—

- (1) INDICATORS, or indicative of the subject.
- (2) EXPLICATORS, or explanatory of the subject.
- (3) PREDICATORS, or indicative of the predicate.
- (4) ILLUSTRATORS, or illustrative of the predicate, or of the explanation of the subject.
- (5) COMPLEMENTS, or complementary of the predicate.

And complements are either indicators or explicators. Therefore also *complementary indicators* may be explained by explicators, and this explanation may be illustrated by illustrators. And *complementary explicators* may be illustrated by illustrators.

But, since speech is a mode of communication between man and man, mankind speaks with a purpose. The function of sentences is to indicate the purpose of speech. The purpose of speech is either (1) affirmation, (2) denial, (3) interrogation, (4) exhortation, or (5) information. Purpose may be indicated in a sentence by the POSITION of its components, by the TONES of its components, by VARIATION of the forms of its components, and by the addition of introductory words to express it or INTRODUCTORS.

Also, since the function of sentences is to indicate the purpose of speech, *connected purpose* may be indicated by CONNECTED SENTENCES. The relation of connected sentences to each other is that of principal and subordinate. This relation may be expressed by the position of the connected sentences, by variation of the tones or forms of their components, or by the addition of referent words expressing it or REFERENTS. A referent word may express the interrelation of connected sentences by conjoining them, or by substituting itself in the subordinate sentence for the word in the principal sentence to which it refers. Referents are therefore CONJUNCTIONS or SUBSTITUTES.

Also, since the words composing the parts of a sentence are placed in a position of relation to each other, this relation may be expressed in the sentence by the addition of connecting words expressing it or CONNECTORS, or by variation of the forms of the words themselves.

Also, since predictors are specially connected with indicators, explicators with indicators, illustrators and complements with predictors, and referent substitutes with their principals, there is an *intimate relation* between predictor and indicator, indicator and explicator, illustrators and predictor, predictor and complement, referent substitute and principal. This intimate relation may be expressed by the addition of connecting words to express it, or by *correlated coexistence* in the forms of the specially connected words or by their relative position or by their relative tones.

Since speech is a mode of communication between man and man by expression, that communication may be made complete without complete expression. Speech may, therefore, be partly expressed, or be partly left unexpressed. And since speech may be partly left unexpressed, referent words may refer to the unexpressed portions, and words may be related to unexpressed words or correlated to them. Referent substitutes may, therefore, indicate the subject of a sentence.

Again, many words may be used collectively to express the meaning of one word. The collective expression of a single meaning by two or more words is a PHRASE. The relation of a phrase to the word it represents is that of original and substitute. A phrase, therefore, fulfils the function of its original.

Since a phrase is composed of words used collectively to represent a single expression of a meaning, that meaning may be complete in itself. Therefore a phrase may be a sentence. A sentence substituted for a word is a CLAUSE. A clause, therefore, fulfils the function of its original.

Since clauses represent words, a sentence may be composed of clauses, or partly of clauses and partly of words. A sentence composed of clauses, or partly of clauses and partly of words, is a PERIOD.

Therefore a word is functionally either—

- (1) A sentence in itself or an INTRODUCTION,
- (2) An essential component of a sentence, or
- (3) An optional component of a sentence.

The essential components of a sentence are (1) indicators, (2) explicators, (3) predictors, (4) illustrators, (5) complements. And complements are either indicators or explicators.

The optional components of a sentence are (1) introducers, (2) referents, (3) connectors. And referents are either referent conjunctions or referent substitutes.

To recapitulate: Functionally a word is either—

- (1) AN INTRODUCTION, or a sentence in itself.
- (2) AN INDICATOR, or indicative of the subject or complement of a sentence.
- (3) AN EXPLICATOR, or explanatory of its subject or complement.
- (4) A PREDICATOR, or indicative of its predicate.
- (5) AN ILLUSTRATOR, or illustrative of its predicate or complement, or of the explanation of its subject or complement.
- (6) A CONNECTOR, or explanatory of the inter-relation of its components.

121

- (7) An **INTRODUCER**, or explanatory of its purpose.
 (8) A **REFERENT CONJUNCTOR**, or explanatory of the inter-relation of connected sentences by joining them.
 (9) A **REFERENT SUBSTITUTE**, or explanatory of the inter-relation of connected sentences by substitution of itself in the subordinate sentence for the word in the principal sentence to which it refers.

An individual word may fulfil all the functions of words, or it may fulfil only one function, or it may fulfil many functions. When a word can fulfil more than one function, the function it fulfils in a particular sentence is indicated by its *position* in the sentence, either without variation of form or with variation of form or by its *tone*. There are, therefore, **CLASSES OF WORDS**.

Since a word may fulfil only one function, there are as many classes as there are functions. Also since a word may fulfil more than one function, it may belong to as many classes as there are functions which it can fulfil. A word may, therefore, be transferable from one class to another; and this transfer may be effected by its *position* in the sentence without variation of form, or with variation of form or by its *tone*. The class to which a word belongs may, therefore, be indicated by its *FORM* or *TOSE*.

When a word is transferable from one class to another, it belongs primarily to a certain class, and secondarily to other classes. But, since by transfer to another class from the class to which it primarily belongs (with or without variation of form) the word fulfils a new function, it becomes a new word connected with the original word. The relation between **CONNECTED WORDS** is that of parent and offspring. Since the form of a word may indicate its class, both parent and offspring may assume the forms of the classes to which they respectively belong.

When connected words differ in form, they consist of a principal part or **STEM**, and an additional part or **FUNCTIONAL AFFIX**. The function of the stem is to indicate the meaning of the word. The function of the functional affix is to modify that meaning with reference to the function of the word. This *modification* may be effected by indicating the class to which the word belongs, or by indicating its relation or correlation to the other words in the sentence.

A stem may be an original meaning or **SIMPLE STEM**, or it may be a modification of an original meaning or **COMPOUND STEM**. A compound stem consists of a principal part or **ROOT**, and additional parts or **RADICAL AFFIXES**. The function of the root is to indicate the original meaning of the stem. The function of the radical affixes is to indicate the *modification* by which the meaning of the root has been changed into the meaning of the stem.

Since words fulfil functions and belong to classes, they possess *inherent qualities*. The inherent qualities of words may be indicated by **QUALITATIVE AFFIXES** or by **TOSES**.

Affixes are, therefore, *functional*, or indicative of the function of the word to which they are affixed, or of its relation or correlation to the other words in the sentence; *radical* or indicative of the modifications of meaning which its root has undergone; *qualitative*, or indicative of its inherent qualities.

Affixes may be—

- (1) **PREFIXES**, or prefixed to the root, stem, or word;
- (2) **SUFFIXES**, or fixed into the root, stem or word;
- (3) **INFIXES**, or suffixed to the root, stem, or word.

Affixes may be attached to roots, stems, or words in their *full form*, or in a *corried form*. When there is variation of form, there is **INFLXION** or inseparability of the affix from the root, stem, or word. All the functions of affixes can, therefore, be fulfilled by inflexion; and *reflected words* may conform to particular **SIXES OF INFLXION**.

Since a sentence is composed of words placed in a particular order, with or without variation of form, the meaning of a sentence is rendered complete by the combination of the meaning of its components with their position, with their tones, or with their forms, or partly with their position and partly with their forms or tones.

Since sentences are the units of languages, and words are the components of sentences, and since languages are varieties of speech, languages may vary in the forms of their words, in the tones of their words, in the position in which their words are placed in the sentence, or partly in the forms and tones and partly in the position of their words. There are, therefore, **CLASSES OF LANGUAGES**.

Since the meaning of a sentence may be rendered complete by the position of its words, by their tones or by their form, languages are primarily divisible into **SYNTACTICAL LANGUAGES**, or those that express complete meaning by the position and tones of their words; and into **FORMATIVE LANGUAGES**, or those that express complete meaning by the position and forms of their words.

Since syntactical languages use either position or position and tone, they are divisible into **QUALITATIVE LANGUAGES** and **TONIC LANGUAGES**.

Since words are varied in form by the addition of affixes, and since affixes may be attached to words in an unaltered or altered form, formative languages are divisible into **COLLECTIVE LANGUAGES**, or those that add affixes without alteration; and into **SYNTHETIC LANGUAGES**, or those that add affixes with alteration.

Since affixes may be prefixes, infixes, or suffixes, applicative and synthetic languages are each divisible into: (1) **PRO-NEGATIVE LANGUAGES** or those that prefix their affixes;

(2) **INTRO-MUTATIVE LANGUAGES**, or those that infix their affixes; (3) **POST-MUTATIVE LANGUAGES**, or those that suffix their affixes. 121

Languages are, therefore, by class either syntactical or formative. And syntactical languages are either analytical or tonic and formative languages are either agglutinative or synthetic. And agglutinative and synthetic languages are either pre-mutative, intro-mutative, or post-mutative.

A language may belong entirely to one class, or it may belong to more than one class. When a language belongs to more than one class, it belongs primarily to a particular class, and secondarily to other classes.

Since the meaning of a sentence is rendered complete by the meaning of its words in combination with their form or position, languages may be **CONNECTED LANGUAGES**, or those that vary the forms, the tones or the position, without varying the meanings, of their words.

Since variation of form is effected by the addition of affixes in an unaltered or altered form, connected languages may vary the affixes without variation of the roots or stems of their words. Connected languages whose stems are common belong to a **GROUP**. Connected languages whose roots are common belong to a **FAMILY**; and, therefore, all connected languages belonging to a group belong to the same family.

Diagrams to illustrate the Theory of Universal Grammar.

Diagrams are now given illustrating the Theory, in order to make the explanation of the Andaman and Nicobar Languages according to it the easier to understand. These diagrams are as follow:—

I	The Sentence illustrated	by its components.
II	" " "	by the inter-relation of its components.
III	" " "	by its function.
IV	" " "	by its expanded components.
V	" " "	by the inter-relation of its expanded components.
VI	" " "	by the functions of its components.
VII	" " "	by the classes of its components.
VIII	" " "	by the inter-relation of the classes of its components.
IX	" " "	by the inter-relation of the functions of its components.
X	" " "	by the position, tone and form of its components.
XI	" " "	by general development into languages.
XII	" " "	by development into classes of languages.
XIII	" " "	by development into inter-related classes of languages.

DIAGRAMS OF DETAILS.

I

121

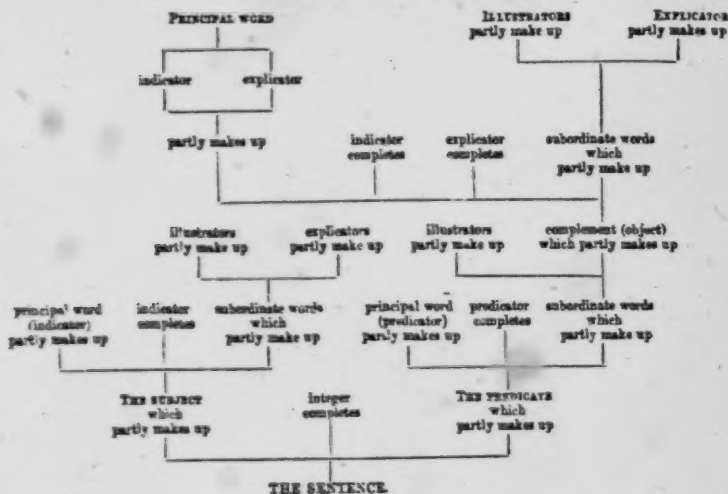
ILLUSTRATING ANALYSIS OF THE SENTENCE BY ITS COMPONENT WORDS.

NOTES.—A Sentence is composed of words.

A Word is the expression of a meaning.

A Sentence is the expression of a complete meaning.

Words required to express the meaning of a sentence are (1) integers, (2) indicators, (3) predictors, (4) explicators, (5) illustrators.



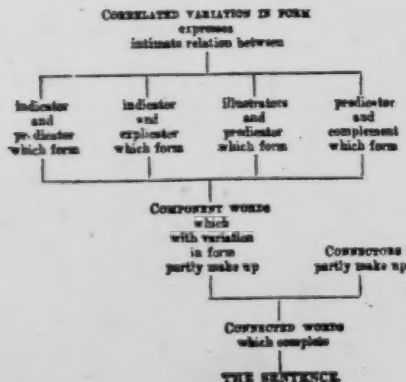
II.

ILLUSTRATING ANALYSIS OF THE SENTENCE BY THE INTER-RELATION AND INTIMATE RELATION OF ITS COMPONENT WORDS.

NOTES.—Inter-relation of component words is expressed by variation in form.

Intimate relation of component words is expressed by correlated variation in form (agreement).

Words required to express the inter-relation of component words are (6) connectors.



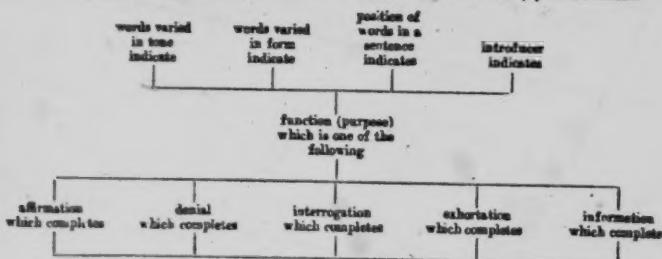
III.

ILLUSTRATING ANALYSIS OF THE SENTENCE BY ITS FUNCTION.

NOTE.—The function of a sentence is to express its purpose.

Words required to express the function of a sentence are (7) Introducers.

12/



THE SENTENCE

IV.

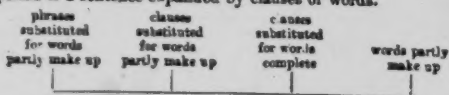
ILLUSTRATING ANALYSIS OF THE SENTENCE EXPANDED BY THE SUBSTITUTION OF PHRASES, CLAUSES AND SENTENCES FOR WORDS.

(PERIODS)

NOTE.—A phrase is the substitute for a word by the collective expression of a meaning by two or more words.

A clause is the substitute for a word by the collective expression of a complete meaning by two or more words.

A period is a sentence expanded by clauses or words.

THE SENTENCE
(Expanded - PERIOD).

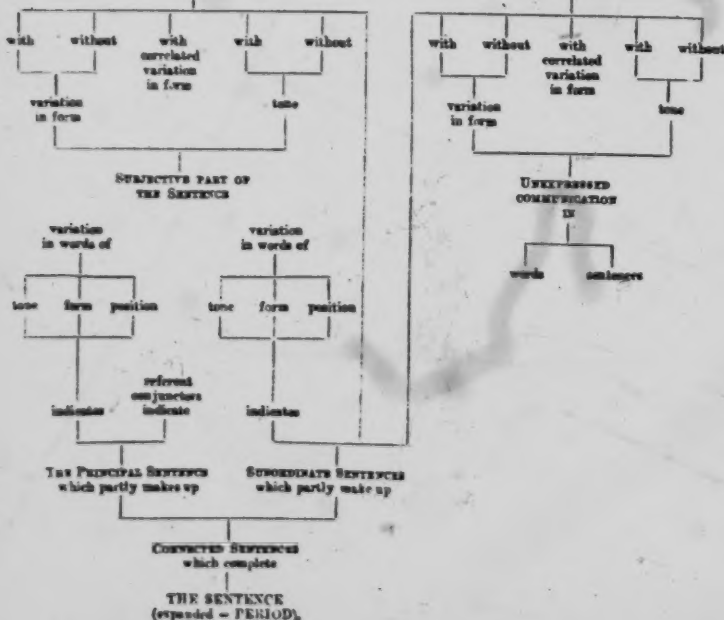
V.

ILLUSTRATING ANALYSIS OF THE SENTENCE WHEN EXPANDED BY THE INTER-RELATION OF ITS COMPONENTS.

NOTE.—Connected sentences express connected purposes. Words required to express the inter-relation of connected sentences are (8) referent conjunctions. (9) referent substitutes. A tone is a point on a conventional scale of the voice in speaking.

(9) REFERENT SUBSTITUTES INDICATES

(8) REFERENT CONJUNCTIONS INDICATES

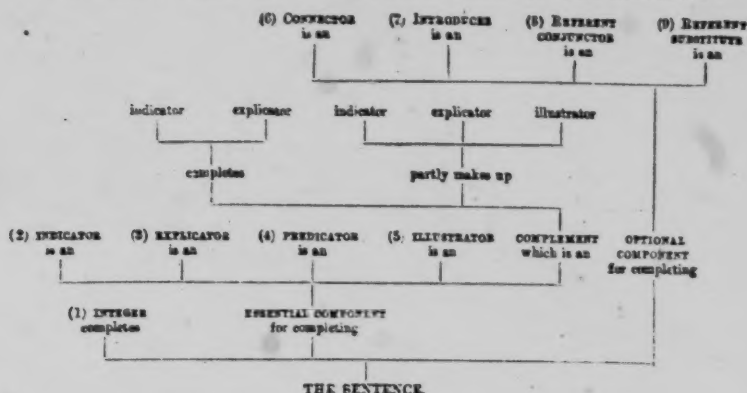


130

VI.

121

ILLUSTRATING ANALYSIS OF THE SENTENCE BY THE FUNCTIONS OF ITS COMPONENTS.

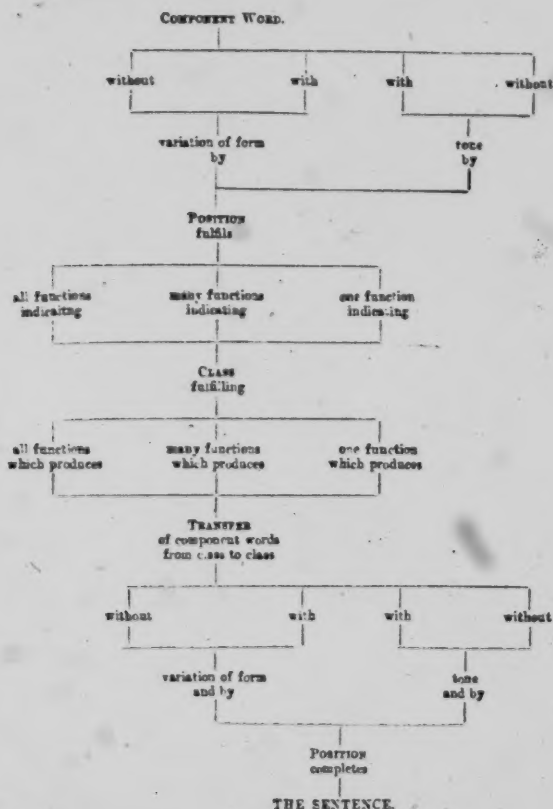


VII.

ILLUSTRATING ANALYSIS OF THE SENTENCE BY CLASSES OF ITS COMPONENTS.

NOTES.—Class indicates the nature of a word.

Form indicates the class of a word.



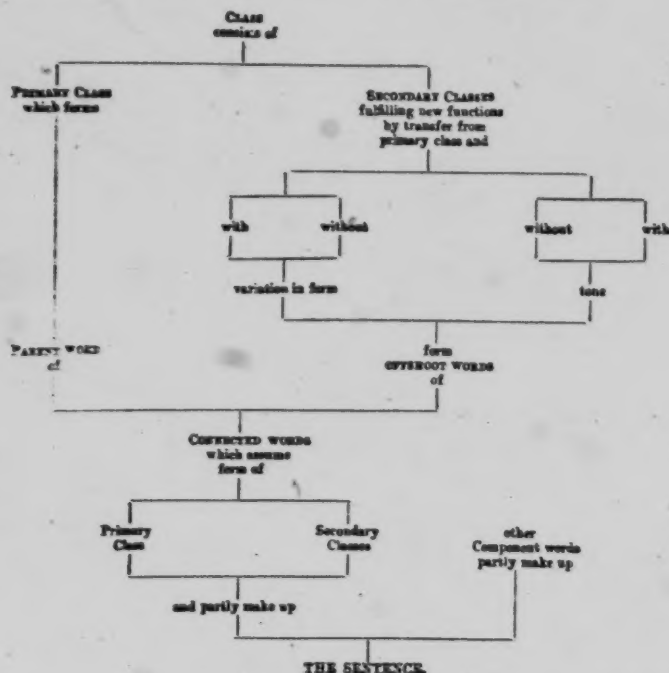
131

VIII.

ILLUSTRATING ANALYSIS OF THE SENTENCE BY THE INTER-RELATION OF THE CLASSES
OF ITS COMPONENTS.

121

NOTE.—Connected words indicate their transfer from one class to another.



IX.

ILLUSTRATING ANALYSIS OF THE SENTENCE BY THE INTER-RELATION OF THE
FUNCTIONS OF ITS COMPONENTS.

NOTE.—The root indicates the original meaning of a word.

Affixes comprise prefixes, infixes, suffixes.

Affixes modify the meaning of a word.

A radical affix modifies the meaning of a root.

A simple stem is the principal part of a word indicating its meaning.

A functional affix modifies the meaning of a stem in relation to its function.

A compound stem comprises a root and its radical affix.

A qualitative affix modifies a word by indicating its nature (inherent qualities) in relation to function or class.

Connected words comprise stems and their functional affixes.

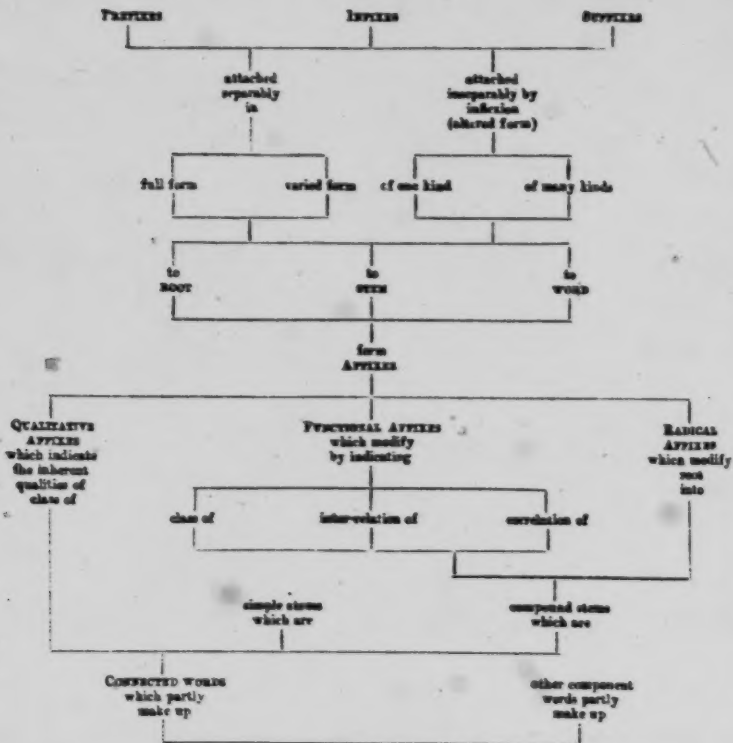
Inflection is caused by an alteration in the form of inseparable affixes.

Inflected words conform to particular kinds of inflection.

Tone is a substitute for inflection.

133

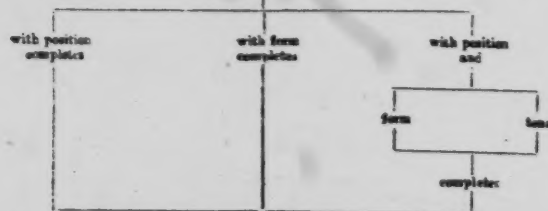
(12)



THE SENTENCE.

X.

ILLUSTRATING ANALYSIS OF THE SENTENCE BY THE POSITION, TONE AND FORM OF ITS COMPONENTS.

Meaning
of components

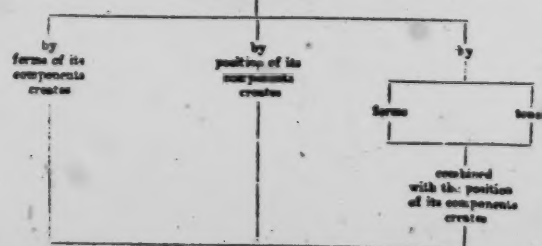
THE SENTENCE.

XI.

ILLUSTRATING ANALYSIS OF ALL LANGUAGES BY GENERAL DEVELOPMENT FROM THE SENTENCE.

NOTE.—No language has ever developed along one line of development only.

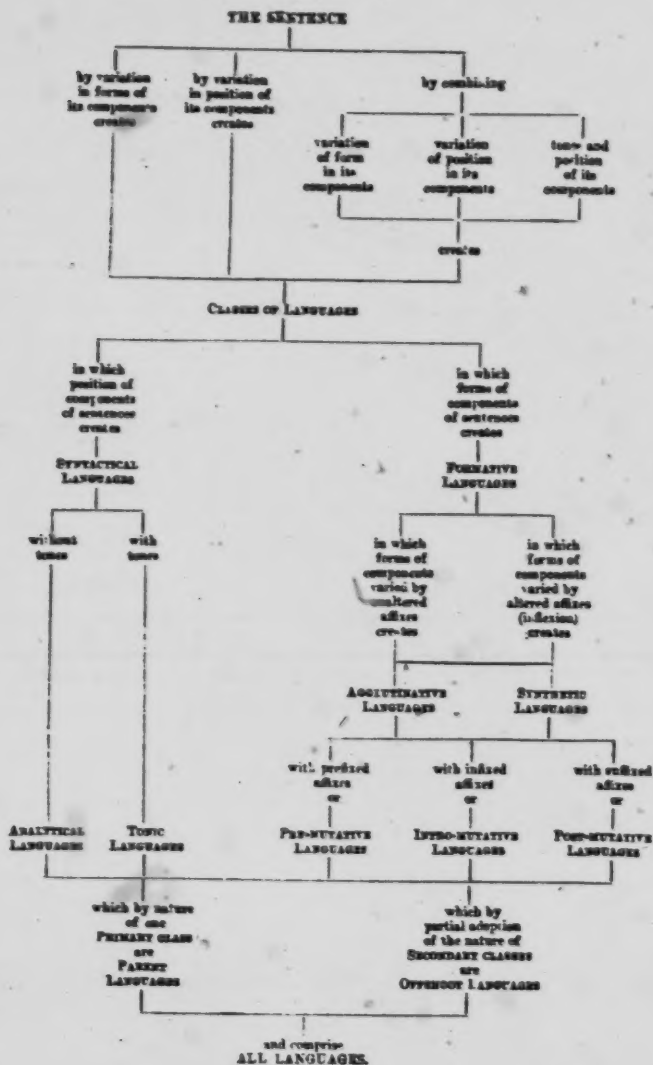
THE SENTENCE



ALL LANGUAGES.

ILLUSTRATING ANALYSIS OF ALL LANGUAGES BY DEVELOPMENT IN CLASSES
FROM THE SENTENCE.

121

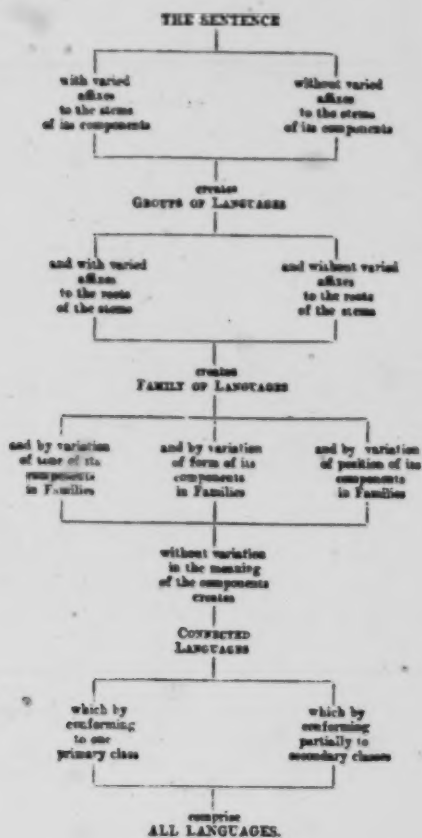


134

XIII.

121

ILLUSTRATING ANALYSIS OF ALL LANGUAGES BY DEVELOPMENT IN THE INTER-RELATION
OF CLASSES FROM THE SENTENCE.



APPENDIX B.

AN ONGE VOCABULARY.

The "Outer Group" of the Andamanese (Önges and Jarawas) bears the closest resemblance in customs, etc., i.e., assuming them to bear any at all, to the Samangs and Aetas, of all the Andamanese Tribes, and hence there is much interest exhibited in their languages. In this Appendix, therefore, is gathered together as much of the Önge Vocabulary as can be with any degree of safety extracted from Portman's *Andamanese Manual*, the information in which is not, however, unfortunately, as clear as is desirable. In the following Table the roots have been separated from the prefixes and suffixes.

192

ÖNGE VOCABULARY.

abundant	gene	cold (to feel)	ungr-te-be
abuse (to)	önu-kwe-be	come (to)	inai-öba-be, önu-
ache (to)	öni-dang-wu-be (bones a.)	copulate (to)	kwange-me
acid	a-föi	cough	ng-ö-töb-be (you c.)
adze	doi	crab	udu-ge
ant	chantibo-de	creek	kagais
apron (women's)	ng-a-kwinyoga-le (your a.)	cyrena-shell (scraper)	krai
armlet	ibi-kwe	dance	totu-le
arrow (iron)	bartoi	dead (to be)	ömo-la-ge
arrow (wood)	tota-le	deaf	beckame-me
arrow (fish)	tome	dish (wooden)	ik-aibene
arrow (pig)	taköi	drink (to)	da-nge- (wood)
arrow-shaft	taketo-le	dugong	töba-nge
ashes	tongtute	ear	injo-be
awake (to)	löga-be	earth	twowe
bag (of netting)	kumumwi, tangu-le	eat (to)	ik-kwa-ge
hale out (to)	gaive-böko-be	ebb tide	tutano
bamboo	ö-da-le	embrace	eni-lokwa-le
banana	yölo-le	eye	ga-de
barb	gaugwi	fall (to)	ku-ge
barb (arrow)	tome	fastening (a)	uni-jebai
basket	tö-le	feather	i-toka-be
beard	öngu-bo-de	fern	gwi-kwe
beat (to)	yökü-be	fever (to have)	gö-de
beetle	todanchu	fight (to)	tomejai, lakakai
beli (round)	m-are-kwa-ge (my h.)	finger	ungr-te-be
belt (broad, flat)	m-ino-kwe (my h.)	fire	önu-kwa-be
binder	tu-kwe	fish	ome
bite (to)	öni-baga-be	flit	tute
black	be	flip (to)	cho-ge
blood	gache-nge	flood tide	o-beke
blow (to)	a-kwöb-be	fly	öni-tötöge-be
boil (to)	tümbai-be)	food (to take)	kobakwe-le
bone	ichin-da-nge	foot	ngönoi
bone (human)	uni-da-nge	forbid (to)	ng-i-da-be (you t. f.)
bow	a-ai	glad (to be)	m-ge (my f.)
break (to)	ng-i-kwa-be (you b.)	go (to)	gobokwe-be
breast	ng-a-ka-ge (your b.)	"God"	a-kiotö-be
breaths (to)	kwai-be	good	öni-töto-be (come),
broom	da-ge	grass	bujo-be (walk)
bucket (wood)	ukwi	green	Ulu-ge
bucket (bamboo)	kubuda-nge	gun	i-wado
butterfly	hebe-le	hair	tokwongöye
call (to)	eng-yö-be, önai-waba -be	hand	totanda-nge
case	tati	head-dress (cane)	uni-nye
cane-necklace	i-deda-le	heavy (to be)	m-ode (my h.)
canoe	da-nge	hip	m-ome (my h.)
cast away (to)	yöbome-be	hiss	ng-i-deda-le (your h. d.)
check	ng-ig-bai (your c.)	hit (with arrow)	ng-a-tukwö-be (you are h.)
chin	ibi-da-nge	honey	öni-bai
clam	taga-le	hook (for fish)	ng-ik-iki (you h.)
clap (to)	aho-hana-betwe-be	hop (to)	gai-be
clay (white for smearing.)	wa	hot (to be)	tanjai
cloud	haije	how much?	tome
coconut	da-ge (? wood, tree)		ichin-kwöle-be

192

hum (to)	gorai	shave	ōno-tale-be
hungry (to be)	angi-ai-me	shell	todandwi
hut	bedai	shoot (arrow)	gai-be
I, my	mi	sing (to)	ng-ō-gabe-be (you s.)
ladian (an)	i-neme	sit (to)	unan-tōkō-be
iguana	giri	skin	gangwi (peel)
iron (knife)	lei	sky	hango-nge (what is flat)
jawbone (human)		sleep (to)	omo-ka-be
ornament	ang-bo-de	small	haii
jump (to)	akwa-tokwa-be	smoke	eno-taboi
kick (to)	ōni-takwō-be	snake	tomogwi
kiss (to) (? small)	nyōnyō-be	snake (rus)	teba-le
knee	m-ōle-ge (my k.)	snore	e-chi-be
kneel	ōno-lakwōchō-be	sore (a)	ōni-bai
laugh (to)	ng-eng-ama-be (you l.)	spill (to)	ng-i-be-be (you a.)
leaf	be-be (to be flat)	spine	ōno-noda-kwoi
lick (to)	ng-i-tomo-be (you l.)	spitting	una-kwa-nge
lie down (to)	ng-aiyi-be (you l. d.)	sprinkle (to)	una-nadi-be
lip	ōnge-me	squeak (to)	gilako-be
lizard	kō-ge	squeeze (to)	une-go-be
man	uni-agi-le (married m.)	stand	doka-be
mangrove	tun-da-nge (lea tree)	stomach	ōnan-nge-nge
mangrove fruit	kwa	stone	taiyi
marry (to)	ini-a-be	stool (to)	ōni-yu-be
mat (sleeping)	emai	stretch (to)	ina-kwombwōke-be
micturate	ō-chōtō-be	stretch (to a.)	ng-i-gōtō-be (you s.)
moon	chile-mo (to be bright)	oneself	yourself
mouse	ala-nge	strike (to)	kwōka-be
much	liwa-nge	string (to)	e-be
murder (to)	ōlōlaji-be	stroke (to)	una-ōe-be
nail	m-ōbede-nge (my n.)	sun	eke
nautilus-shell (cup)	grai	surf	balame
navel	ōni-kwa-le	swallow (a)	tugede-le
neck	ōna-ngito	sweep (to)	tote-be
necklace	m-a-ngitoke (my n.)	swim (to)	kwane-be
net	chi-kwe	take away (to)	ng-eakingkō-be
nose	uni-nyaihai		(you t. a.)
orchid	kōyō	take hold (to)	ng-eng-be (you t. h.)
ornament (of shav-		tattoo (to)	ng-ulakwone-be
ings)	kwibo-le		(you t.)
outrigger	i-bede-ge	tear (to)	i-dokwō-be
paddle	tai	terricles	ōni-kwō-ge
pandanus fruit	ba-le	thorn	tundankie
path	iche-le	throat	ō-ngito
peel	gangwi	throw	wōtaikwō-be
pig	kwi	thunder	ōle-ge ("God")
pinch	ōni-gini-be	tiptoe (to be on)	ōnu-jagaō-be
prick	ōni-takwa-be	tongue	alan-da-nge
pot (cooking)	buchu (to-le, its case)	tooth	m-a-kwe (my t.)
quick, be	ing-kō!	torch	to-kwe
rain	gujō-nge	tray (for food)	toba-ge
red ochre	alame	tumble (to)	i-teka-be
red wax	kwengane	turtle	nadela-nge, takwatoai
resin	mone	turtle eggs	kwagane
ringworm	jwichwi	tsuk (pig)	a-kwe
rope	kwōla-ge	umbrella (leaf)	o-modu
rub (to)	eb-ele-be	untie (to)	i-lebu-be
run (to)	akwe-bele-be	vomit (to)	ō-bulō-be
saline	nge	water	i-nge
saliva	ina-kwe-nge	wax (white bees')	chileme
salt	inje	weep (to)	wana-be
sand	belai	whetstone	tijō-be
scar	ōni-bare	whisk (for flies)	tomo-ge
scratch (to)	akwe-ō-be	whistling	ōni-anga-le
sea	i-nge (water)	white	tonkute
shampoo (to)	ine-ō-be	wife	uni-au-le
shark	kadu	wind	totōte
sharp	gichare	wound	ōni-ba-le
sharpen (to)	totōkwe-be	yawn (to)	ōna-langtō-be
		yes	une-laije

APPENDIX C.

THE FIRE LEGEND IN THE BOJINGIJI GROUP.

(The Bas Version is already given in the Text.)

BALAWA VERSION.

Dim-Ddra—*la rita* Keri-Fong-tower — *te Palaga* Fi tango aleeps F — *omo*
 (a Man) long-ago (a Place) — by God his platform fire bringing
 — *hate* | *ong it* *akat-pdra* *pagura* — *t F. — a — re* | *Boiab* *he* *Tarkdr*
 — *was* | he taking all—men burn — *t* *di — d* | (a Man) and (a Man)
he Bilichau *ongot oto — jurgun* — *t — is* | *ongot* *at — ydhat* *no*
 and (a Man) they in-the-see-wen — *t — did* | they fish becom—
 — *aga* | *ongot oaro* — *hichal-ona* — *te* *Rokwa-Far-tonga-barojj* — *a* *oto — dal*
 — *ing* | they carry-taking— by (a Place) —village— in fire-mak—
 — *aga F — a — re*
 — *ing* *di — d*

Portman's Rendering.—Dim-Ddra, a very long time ago, at Keri-Fong-tower, was bringing fire from God's platform. He taking the fire, burnt everybody with it. Boiab and Tarkdr and Bilichau fall into the sea and became fish. They took the fire to Rokwa-l' ar-tonga village and made fires there.

BOJIGYAB VERSION.

Tdl-Poko-tim — *su Bilik Fong* — *pat — ye* | *Luratut* | *Fong at* *ab — lachi — aga* |
 (a Place) — in God sleep — did | (a Bird) | he fire bring — ing |
Luratut Fong — *di — ye* | *kota ong Bilik Feb — biki — ye* | *kota Bilik Fong — konyi* |
 (a Bird) seis — ed | then he God burn — t | then God fire-hitt — ing |
 — *ye* | *Bilik* | *Fong at li — ye* | *ong e* *Luratut Fote — toi — chu — aga* |
 — *ed* | God | he fire seis — ed | he then (a Bird) (with) fire-hitt — ing |
kota kol *ong e* *Tarchal Fote — toi — chu — ye* | *Chalter* *Fong — di — ye* |
 then again he then (a man) (with) fire-hit — did | (a Bird) seis — ed |
ong Lau-Cham — *len da — aga* | *Wota-Emi — ru oto* *Lau-Cham* | *n'ong e — kadak — aga* |
 he ancestors — to giv — ing | Wota-Emi — in then ancestors | they fire-mak — ing.

Portman's Rendering.—God was sleeping in Tdl-Poko-tima. Luratut went to bring fire. Luratut caught hold of the fire, then he burnt God. Then God woke up. God seized the fire. He hit Luratut with the fire. Then again he hit Tarchal with the fire. Chalter caught hold of it. He gave it to the ancestors. Then the ancestors made fire at Wota-Emi.

JUWAI VERSION.

Kuro-t'on-mik — *a Mem Mirit — la* | *Bilik Fokt — sma — t* | *peakar at — lo top*
 (a Place) — in Mr. Pigeon | God sleep — t | wood fire—with stealing
 — *chike* *at laiche* *Lech* — *lia a* | *kotak a* *sko — kodak* — *chiae at — lo*
 — *was* fire the-late (a Man) —to he | then he fire-mak — did fire—with
Karst-tatak — mi — in
 (a Place) — at

Portman's Rendering.—Mr. Pigeon stole a firebrand at Kuro-t'on-mika, while God was sleeping. He gave the brand to the late Lech, who then made fires at Karst-tatak-emi.

KOL VERSION.

Tdl-Poko-tim — *su Bilik* — *la pat — ke* | *Luratut — la Olo-Emi — t* *at kek — an* |
 (a Place) — in God asleep — was | (a Bird) (a Place) — in fire too — k |
Klotat — *ke* | *lia F — a — chol — su Min-tong-ta — koto* | *Min-tong-ta — koto — lak*
 (a Man) — was | by (he) — wen — t (a Place) — to | (a Place) — to — by
F — in — *hil* — *su* | *Klotat F'ir — pin* *F'ir — dsk — an* | *L'irim — kadak — an*
 (it) — out-wen — t | (a Man) charcoal break — did | fire-mak — did |
a's a'otam — tepur — an | *at — ke a'ote — tepur — an* | *Min-tong-tok — poroich —*
 they alive — became | fire — by (they) — alive — became | (a Place) village —
in Jangil | *a's Foko — kadak — an* |
 in ancestors | they fire-mak — did |

Portman's Rendering.—God was sleeping at Tdl-Poko-tima. Luratut took away fire to Olo-Emi. Klotat went to Min-tong-ta (taking fire with him from Olo-Emi). At Min-tong-ta the fire went out. Klotat broke up the charred firewood and made fire again (by blowing up the embers). They (the people there) became alive. Owing to the fire they became alive. The ancestors thus got fire in Min-tong-tok village.

3: Temple
126

AZ2 Andanans AZ2

[For methods of arriving at census data and detailed diaries
kept by the census parties, see category 116, pp. 2-25, 69-95.]